Tyler Dzuba. The Undergraduate Citation Experience: Plagiarism's Lens. A Master's paper for the M.S. in L.S. degree. April, 2011. 86 pages. Advisor: Jeffrey Pomerantz

As a central practice in scholarship, citation is an important skill to be acquired by undergraduate students. However, scholars display vast disagreement on the ways in which this skills should be taught. Most frequently, citation is approached from the perspective of plagiarism. This critical review examines the core literature surrounding the undergraduate experience of citation and plagiarism. Pedagogies of citation and plagiarism are described, along with the literature on citation mechanics, strategies for defining and dealing with plagiarism, and changes called for in how the academy understands plagiarism. Relevant learning theory concepts are also explored. The review concludes with a discussion of potential implications and topic areas for future research.

Headings:

Bibliographical citations

Plagiarism

College and university libraries -- Services to undergraduate students

THE UNDERGRADUATE CITATION EXPERIENCE: PLAGAIARISM'S LENS

by
Tyler Dzuba

A Master's paper submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science in
Library Science.

Chapel Hill, North Carolina

April, 2011

Approved by:

_____

Jeffrey Pomerantz

Contents

Acknowledgements

The fact is, I could never hope to do justice to all those who have been involved in some way with my writing. So, if I've omitted crucial people, I hope that you'll accapt my apology. I have only so many pages to print on, after all.

Most central to the writing of this paper has been my advisor, Jeff Pomerantz. From my first semester at SILS in his reference class, he has been exceptionally gracious with his time and his advice. At every turn of this paper, his wise words have made it the complete, if imperfect, work it is today.

Special thanks must go to my classmates at SILS. All of them have been so supportive through this process—there's a certain magic in master's paper season. We've suffered together, but we're all making it somehow. There might even be gainful employment at the end, as well. In particular, I want to thank Hannah Winkler, Tammy Ivins, and Elyssa Sanner, for their encouraging words and actions.

I'd be remiss to forget several faculty at SILS who have made these two years unforgettable. Diane Kelly provided spectacular advice at the beginning of my work for this paper. Barbara Moran and Barbara Wildemuth have always been available for advice and support.

And finally, I wish to thank my parents, Brian and Claudia Dzuba, for their tireless support as I've come to this point. Their influence has made me proud to carry their name.

1

Introduction

As undergraduates are introduced to the culture of scholarship, learning how to properly deal with scholarly literature is a significant hurdle. For perhaps the first time, students are being asked to sort through a mass of text on a topic, pick out the salient themes, and report back—with credit given to their sources.

Citation is a key aspect of scholarly writing, and methods of teaching students to do it right is a common topic of pedagogical debate. In any discussion of citation, though, plagiarism is never far behind. As accusations of plagiarism receive much attention in the academy, it is no wonder that the word is on everyone's lips when issues of academic integrity and honor are raised.

The undergraduate experience of citation and plagiarism has been broadly examined in the library and information science, education, psychology, and anthropology literatures. Over the course of this review, I will touch on the main themes of how this important aspect of undergraduate education is handled by the literature, with the goal of providing a comprehensive overview of what work has been done, what gaps exist, and how those gaps may be filled.

In section 2, I will consider the (brief) body of work on how citation is taught in the academy. Section 3 covers research on the mechanics of citation—types of sources, citation errors, and style—which makes up the bulk of citation-specific literature.

The focus will shift in section 4 to a discussion of plagiarism, whichhas received far more attention than citation in recent scholarly debate. Section 5 examines recent

trends in the literature toward reframing plagiarism in context of postmodern conceptions of authorship, the self, and intellectual property. In section 6, I will examine work focusing on the pedagogy of plagiarism and methods for approaching this topic with undergraduate students.

Section 7 covers theories of learning which are applicable to the pedagogy of citation and plagiarism. The review will conclude with a summary of my findings from the literature, a discussion of how this work might be synthesized into new theories, and suggestions for areas of future work.

2

Citation Pedagogy

In a recent study by Project Information Literacy out of the University of Washington, college students were surveyed about how they use information in a digital context (Head & Eisenberg, 2010). The students were asked to select the most difficult steps from a list of behaviors which might be involved in writing a research paper. The most highly ranked steps surrounded framing tasks at the beginning of an assignment and determining when a project is satisfactorily complete, but students also expressed concerns about citation and plagiarism. Of the respondents, 41% expressed difficulty in knowing how to cite sources, 35% in determining whether they have plagiarized, and 29% in knowing when to cite. Obviously, citation and plagiarism are significant concerns for college students—so what's being done about it?

In short, pedagogy has overwhelmingly focused on plagiarism as either a moral shortcoming or legal infraction (Blum, 2009). Very little work to this point has focused on a pedagogy of citation in absence of plagiarism. In section 6, I will consider the breadth of plagiarism pedagogy. Here, we will address only the citation-specific pedagogical literature.

Naturally, one of the primary confusions for undergraduates dealing with citation is determining how to navigate formal citation styles. Mages and Garson (2010) detailed a pilot online APA citation tutorial at the Harvard Graduate School of Education and its efficacy for students and scholars. Through multiple modes of data collection, this mixed-methods study sought to determine whether the tutorial was

useful, whether academic background had an effect on users' experience with the tool, and whether prior familiarity with APA style had a similar effect. The tutorial was wildly popular and received excellent reviews from all groups involved. The authors concluded that there is a need for such kinds of instruction material, and that constant evaluation from librarians contributes heavily to the success of such tools. Differing styles may contribute to accidental plagiarism (Mages & Garson, 2010; Freimer & Perry, 1986), so effective instruction on styles is very helpful for attenuating those problems.

Citation style, of course, is not constant. Changes in stylebook recommendations, additional material formats, and changing customs make the educators job more difficult (S. Park, Mardis, & Ury, 2011). Also, there is ambiguity surrounding whose job it is to teach proper citation to students. In response to these difficulties, B.D. Owens Library of Northwest Missouri State University instituted a four-pronged approach to educate students on citation. First, "textbooks", including style manuals and library-built citation guides, provide examples and rules to illustrate the formulation of a bibliographic citation. The librarians had also created a set of online tutorials covering plagiarism and academic honesty in an effort to provide self-paced and easily accessible instruction. In-person instruction sessions included modules on citation. Finally, one-on-one reference interviews are considered the traditional mode of citation education, according to S. Park et al. (2011); the number of citation-related transactions had increased dramatically over the last few years reported, while overall reference stats had increased modestly, and every other category of reference transaction had either decreased or remained constant at a negligible level. The authors concluded that, while all the modes of instruction are well-used, one-on-one reference interactions are the most sought-after.

Given that there are effective ways to teach citation as an academic tool, one

further approach is to cover the usefulness of citation to the researcher. Hammond and Brown (2008, May) described a peer-training program instituted at the University of Connecticut in order to introduce students to citation searching. Hammond and Brown stated that, by learning about the use of citation databases such as Web of Science and Scopus, students are better equipped to perform effective interdisciplinary literature searches through chaining citations forward and backward from a single article of interest. As an added benefit, students who themselves have published literature can use these databases to assess how well their own work is cited, which can be an effective tool in the job search, grantwriting, and advocacy for promotion and tenure.

2.1 A gap

It should be noted at this point that this section is exceedingly short. The primary reason for this, as mentioned earlier, is that the vast majority of reviewed literature did not address the pedagogy of citation itself. Rather, plagiarism is in the spotlight, as discussed in sections 4 and 6. The implications of this gap in the literature are explored more fully in section 8.

3

Mechanics of citation

In the experimental literature on citation, researchers have primarily focused on the mechanics of how undergraduates select documents to cite and format their bibliographies. In general, these studies can be grouped into three main topics:

1. source selection,
2. errors in citation, and
3. citation style.

I will examine each of these in turn.

3.1 Source selection

Davis (2002) offers a prime example of research examining source selection. This study continued a line of research by Davis and Cohen (2001) which examined the types of sources which undergraduates gravitated toward in writing term papers, as well as common errors they made in producing usable citations. In both studies, the author(s) gathered bibliographies from term papers in an introductory economics class. The citations were coded by type (e.g., book, web), and online citations were tested for usable links and findability. Davis (2002) found in this update that, while the average number of citations undergraduates made had increased over time from 10 to 13, this increase was exclusively from the number of non-scholarly sources

included. (These were defined as newspapers and magazines; web citations were not included in this measure since many were unfindable or ambiguously scholarly.) Interestingly, though the author(s) speculated that the number of citations (either total or of scholarly/non-scholarly provenance) would be correlated to the students' grades, no such correlation was found. Also, the authors found that the 2000 sample of Internet citations had a better chance of still directing a web browser to the correct document than the sample from 1999, indicating improved link stability and perhaps better citation practice.

In sum, Davis (2002) observed that changes in the professor's verbal instructions for the assignment had very little effect on the students' behavior; rather, the written instructions, which remained unchanged from study to study, seemed to have the most influence. He concluded by suggesting that professors must be more explicit in their written expectations in order to persuade students to use scholarly resources such as monographs and journals; also, Davis pointed out that professors and librarians will have to collaborate for either to be most effective in their services.

Davis continued his work in another article (2003) which considered how a professor's instructions regarding source format affected the types of sources which undergraduates used. In this updated sample from 2001, Davis reports an addition to the professor's instructions which explicitly stated a minimum number of scholarly sources, requirement of proper bibliographic citation even for electronic sources, and notice that TAs will penalize assignments for having too few scholarly sources or improper citation. In the previous studies, no such statements were included in the assignment; the addition was a result of concerns in the department that students were failing to use scholarly sources adequately.

In the 2001 sample, there were significant changes in source types used from the prior years. Books and journal articles were used more frequently, whereas elecronic

and newspaper citations declined. The number of scholarly resources, which had risen from the 1996 sample to the 1999 and 2000 samples, declined back to 1996 levels in 2001. Davis also analyzed the persistency of web citations. Consistenly over time, URLs became more stable in student bibliographies. It is apparent, then, that students were responsive to explicit requests for proper web citations, as well as written descriptions of acceptable scholarly resources.

Cook-Cottone, Dutt-Doner, and Schoen (2007) delved more deeply into how students deal with the presence of full-text databases (FTDBs) in their research. The authors wanted to find out how reliant students were on these sources, as well as what factors may contribute to that reliance. In a survey of undergraduates and graduate students, Cook-Cottone et al. gathered self-reported measures of FTDB reliance, as well as how convenience, lack of time management skills, knowledge of searching, and understanding of research quality affected their article retrieval choices. Students were found to be extremely reliant on FTDBs: 29% of respondents used them exclusively for article needs, and 89% used them at least a quarter of the time. Convenience played the largest role in that preference, then time management and appreciation of research quality to a lesser extent, and search knowledge not at all. Undergraduates and graduate students showed no difference in FTDB reliance, nor convenience preference. However, graduate students placed more weight on research quality and knowledge of searching, and displayed better time management skills. For this reason, Cook-Cottone et al. suggested that library instruction directed to undergraduates, especially underclassmen, should be focused on issues of information literacy moreso than the mechanics of tools.

This distinction between levels of student was also explored by Carlson (2006) in a study of how citation behavior of undergraduates is affected by class year, academic discipline, and course level. Bibliographies were gathered from 47 courses of

varying discipline and course level. Effects were found in all potential factors analyzed. Freshmen cited fewer journal articles than sophomores, juniors, and seniors, as well as fewer sources overall. Humanities bibliographies included more books than bibliographies in social science or freshman-level foundation courses, whereas social science bibliographies included more journal articles than the other two disciplines; the social science bibliographies included more entries overall than the other categories due to this emphasis on journals. The foundation courses had over twice as many web citations than the humanities or social science courses. With respect to course level, upper-level courses cited more books and journal articles, and foundation seminars cited more websites. Also, 200 and 300/400 level classes cited more sources overall than 100- or foundation-level. Overall, books were found to be cited most frequently in all categories. Unexpectedly to many faculty, only 45% of the bibliographies studied included any web citations at all.

Many similar studies can be found in the literature to support similar claims: face-to-face and online courses result in similar bibliographies (Clark & Chinburg, 2010); although web citations are on the rise, students still aren't sure how to format these citations (Hovde, 2007; Edzan, 2007); students tend to write longer papers and cite more sources as they move through an undergraduate career (Knight-Davis & Sung, 2008); faculty tend to overestimate how many electronic sources their students are using, and students will pass over articles which they find in databases, but can only access the full text of in print (Imler & Hall, 2009). The details, however, are not the point. The overall emphasis in this literature is on post-hoc analysis of citations, without regard to students' motivation or goals in citing.

3.2 Errors in citation

Other studies have dealt with the frequency of errors in citations. One study by Spivey (2004) examined the work of published scholars in the social work literature, finding that out of 500 randomly selected references across five journals, 206—over 40%—had errors which may affect traceability of the original sources. Clarke and Oppenheim (2006) found an error rate of 24.9% in 20 master's dissertation bibliographies, two-thirds of which were related to misentered author names, page numbers, or issue numbers. Edzan (2007) noted that most undergraduate authors executed accurate citations for their print resources, but tended to cite web resources incorrectly. In an examination of general readership nursing journals, one-quarter of examined references had errors; 19% of the citations had major errors, defined as those which would affect retrieval (Oermann, Mason, & Wilmes, 2002).

Jiao, Onwuegbuzie, and Waytowich (2008) studied the relationship between library anxiety and citation errors. Errors were defined to fall into two categories: a citation appearing in either the text or the reference list, but not both; and a mismatch between bibliographic information presented in textual citations and in the reference list. The authors' sample was a group of 93 doctoral candidates who were in a workshop class directed at developing their dissertation proposals.

The authors found that the higher a student's library anxiety was, the more citation errors he or she committed and the less he or she conformed to APA style for references. In particular, the aspects of library anxiety found to be most relevant were:

- Barriers with staff: "students' perceptions and beliefs that librarians are threatening, intimidating, unapproachable, and inaccessible"; and
- Comfort with the library: "how comfortable, secure, welcoming, safe, and non-

threatening users perceive the library to be."

On average, the citation error rate (number of errors over total number of citations) was approximately one-third. Given that the subjects were doctoral students preparing to begin their dissertations, such a high statistic would be appalling in itself. However, Jiao et al. went on to describe the instructor's harsh, but clearly stated, penalty for citation errors (1% per error), which suggests that the students would have performed yet worse without such a repercussion. Finally, the authors alluded to a prior study which pointed to more experienced students having *higher* error rates than less advanced students. Their results, Jiao et al. concluded, suggest that interventions against library anxiety may attenuate these high citation error rates.

Whereas Jiao et al. (2008) dealt with graduate students, Browne, Logan, Lee, and Torreggiani (2004) took up the work of publishing authors, most of whom we can presume are seasoned scholars. (No data were provided on this point.) Similar to the work of Spivey (2004), Browne et al. (2004) analyzed a sample of manuscripts submitted for publication in the radiology literature. The authors had noted that published articles had a significantly large percentage of citation errors, but no study had gone a step earlier in the process, before editors correct the most prominent errors.

After classifying errors into major and minor—loosely, a major error making it very difficult to trace the source, and a minor error otherwise—Browne et al. found that "of [. . .] 259 references, 44% were correct and 56% were incorrect." About four in five of these errors were directly related to authors not following a particular journal's rules for citations. Virtually all of those were considered minor errors—that is, they did not adversely affect the citation's usefulness—but they still indicate a carelessness with prescribed rules.

Web citations suffer from a unique instability. Hovde (2007) examined freshman English papers in 1999 and 2004, specifically dealing with the Internet citations the students made. Students did distressingly bad things with their citation style. In 1999, students frequently cited online resources in non-descript ways on their references pages: Hovde's favorite was, "I only had one source and that was the Internet. P.4–Internet; P.6–Internet" and so on. In 2004, far fewer students committed that kind of citation error, but others emerged, such as providing a link to a top-level domain when the actual cited information was found in a deep interior page. In all, over half of the students' citations in both years failed to provide access to the desired information.

3.3 Citation style

The studies in the last section often noted that citation errors frequently arise from complications of prescribed citation styles, such as APA. These citation styles are frequently given to students as-is, with little explanation given as to why they exist or who they benefit.

Early on, Freimer and Perry (1986) encouraged academic librarians to educate themselves on diverse citation styles, advocate for standardization among styles, and offer their patrons workshops and guides to help them along the way. The authors conducted an informal survey of 20 students, which revealed an unsurprising distaste for various citation styles, accompanied by confusion over the purpose for having such styles at all. Also, Freimer and Perry interviewed several faculty members; from these interviews, they gleaned that faculty perceptions of citation style were vastly different from those of students. Faculty felt that citation was easy and needed little explanation. Also, the rules which faculty taught were frequently outdated with respect to official updates in prescribed styles.

The Zeitgeist expressed by Freimer and Perry (1986) has not changed markedly in the intervening decades. Lewis (2007) discussed the recent changes to APA's Electronic References Guidelines with respect to several features, including the preference for DOIs and certain aspects of how bibliographic management software has not caught up with the new standards. Her general sentiment was that, while these changes are certainly a move in the right direction, in the short term they will only serve to confuse. Tomaiuolo (2007, July/August) offered similar concerns, but with an eye toward the pragmatic: due to market competition, no one in power wants a standard format for bibliographic information. Until a unified group rises to power, Tomaiuolo argued, there will be no progress toward a unified format.

Scholars, however, have consistently been dissatisfied by the variety of citation styles in common use. Gill (2009, June) called into question academic "fetishism" for pet styles. He proposed a simplified author-year-type system which would hypothetically work for any format available.

But given that citation styles will not change or consolidate anytime soon, how do we educate people on their proper usage? Mages and Garson (2010) detailed a pilot online APA citation tutorial at the Harvard Graduate School of Education and its efficacy for students and scholars. Through multiple modes of data collection, this mixed-methods study sought to determine whether the tutorial was useful, whether academic background had an effect on users' experience with the tool, and whether prior familiarity with APA style had a similar effect. The tutorial was wildly popular and received excellent reviews from all groups involved. The authors conclude that there is a need for such kinds of instruction material, and that constant evaluation from librarians contributes heavily to the success of such tools.

Citation style, in short, is a sticking point for researchers, students, and librarians alike.

4

Plagiarism

Compared to the literature on citation discussed in the last two sections, the literature on plagiarism is vast. A perennial point of discussion in the academy and the public square, the scourge of plagiarism is heralded as the impending demise of scholarly mores. One particularly dramatic incarnation states that "we are troubling deaf heaven with our bootless cries (borrowed from Shakespeare!) because traditional plagiarism-prevention strategies discussed on all levels (in classrooms, academic handbooks, honor codes, or libraries) appear to be quite useless" (Germek, 2009). Far from being restricted to student work, plagiarism is a heated concern in scholarly work as well: Kock (1999) provided an extended anecdote of how his published work was blatantly plagiarized in another publication, and how painfully difficult it was to achieve any sort of justice. Instances of plagiarism in the academy color the news (e.g., Abbott, 2007; Reich, 2010).

In light of this, it is important that we explore what plagiarism is, how it is treated in the academy, and what research has been done on it.

4.1 Definitions, Opinions, Concerns

Determining what plagiarism is, first of all, is a non-trivial task. Traditional definitions involve two primary components: using another person's words or ideas, and failing to properly cite that person, thus implying that the words or ideas are one's

own (Anderson & Steneck, 2011; Badke, 2007, Sept/Oct; C. Park, 2003). However, these definitions are malleable and contested. Faculty can't agree (Liddell & Fong, 2005); librarians can't agree (Germek, 2009); and students can't hope to agree given the confusion of their instructors. (More radical conceptions of plagiarism are considered in section 5.)

Definitions are contested not only in the sphere of prose, but in computer science's context of code. Cosma and Joy (2008) conducted a survey of computer science faculty to determine what, precisely, plagiarism is in a programming context. First of all, respondents were quick to point out that not only code can be plagiarized, but also comments, data for example inputs, and user interface design. Beyond that, there are innumerable ways to modify code so as to make plagiarism extremely difficult to detect (cf. C. K. Roy & Cordy, 2007, discussed in section 4.3.1). Self-plagiarism, in which students reuse old assignments in new work without acknowledgement, is also a concern. Most faculty took a hard line with plagiarism; even trivial assignments carried full weight of penalty in cases of plagiarism.

Faculty consider collaboration a special circumstance, according to Cosma and Joy. Students are encouraged to work together, as long as they do not copy each other's work. The distinction is made here between "sharing ideas and sharing work".

This discussion leads into a proposed definition of source-code plagiarism. In short, this definition involves three concepts: reuse of someone else's code or one's own from another context; failure to acknowledge the source, whether intentional or not; and obtaining the code illicitly, whether through payment, theft, collusion, or exchange. Cosma and Joy's definition certainly falls within the general sentiment expressed at the beginning of this section, but with a particular programming twist. Additionally, the authors noted a conflict in advice: object-oriented programming *encourages* reuse as a feature of the coding style, which both conflates licit and illicit

reuse for the newcomer and emphasizes the need for acknowledgement of reuse.

All this work on defining plagiarism suggests another question: why plagiarize? Certainly, if students understood how wrong plagiarism is, some would argue, they would never do it in the first place. McCuen (2008) broke down this question and provided a unique approach grounded in decision process theory. In his view, plagiarism's frequency is nearly always underestimated, because "plagiarism is much more than a failure to cite material." Rather, it is an act centered on uncertainty, and it arises based on poorly-defined citation practices. McCuen offered a five-step decision process which he proposed as a useful model in the etiology of plagiarism:

1. The stimulus event: a potential plagiarist is cued by perceiving either "a performance deficit or an opportunity difference."

2. Identification of alternatives: plagiarism is considered as an option, alongside other, more honest behaviors. McCuen is quick to point out that time and expectation pressures will reduce the time spent at this stage, shortening the list of available options.

3. Information gathering: the actor considers all available options, their strengths, and their weaknesses—including the likelihood of being caught. Eventual plagiarists "generally [lack] the maturity to take a long-term viewpoint", which worsens the decision.

4. Evaluation and decision: a choice is made whether or not to plagiarize. Decisions to plagiarize are often the result of limited identification or inadequate information gathering.

5. Postimplementation assessment: the actor reflects on the experience, as well as any consequences of his or her decision. Guilt may dissuade the plagiarist from

> repeat offense; relief at the circumstance's end may reinforce that decision, on the other hand.

McCuen (2008) noted that pressure to perform and rationalization of actions are core to this process. To combat plagiarism, he concluded, educators can emphasize not only how and what to cite, but also the decisions and attitudes which surround the consideration of plagiarism. Acknowledgement of the pressures and uncertainties inherent to plagiarism is also important.

Libraries find themselves in a particularly important role dealing with plagiarism, as they are traditionally seen as the educators of information literacy and use. In light of changing standards and culture due to electronic content, Germek (2009) suggests that librarians re-examine how to combat plagiarism. The author mentioned that activism against plagiarism had waned in recent years due to over-reliance on plagiarism detection systems as a "magic bullet" (cf. Fiedler & Kaner, 2010). At the same time, conceptions of authorship, intellectual property, and plagiarism are changing in what Germek viewed as a negative way. In any case, librarians need to "either support the claim that plagiarism is a normal part of research and writing, as some have previously advocated, or stress that intentionally or unintentionally borrowed words inserted without attribution is [*sic*] clearly something to avoid."

Germek (2009) suggested a five-pronged approach for librarians to re-enter the fold of plagiarism avoidance. These include reconsidering the ACRL guidelines for Information Literacy (Association of College and Research Libraries, 2009) to improve the language concerning plagiarism; addressing the threat to academic integrity which is evident in cultural attitudes toward plagiarism; speaking against the use of plagiarism detection systems as a panacea; discussing plagiarism and related policies in information literacy instruction; and developing channels of communication in the academy and classroom to speak against plagiarism. Since scholarship itself is at risk

due to changing attitudes toward plagiarism, Germek (2009) concluded, "a collaborative call to arms must be made on all levels of colleges and universities to see that students intensely recognize and reject the unethical practice of quotation without attribution."

4.2 Research

Countless studies have examined the prevalence of plagiarism and student attitudes toward the practice. For brevity, I will cover only a few notable ones.

Plagiarism is considered a problem not only once students are enrolled in a program, but as they vie for admission. In a study of personal statements for medical residency applications, Segal et al. (2010) used Turnitin (iParadigms, 2011) to detect likely plagiarism. About 1 in 20 essays were found to have sufficient evidence to suggest plagiarized content. Upon analysis of how demographic characteristics related to plagiarism, the authors found that international applicants, older applicants, native speakers of non-English languages, and applicants with past residency experience were more likely to have high plagiarism scores from Turnitin. On the other side, applicants who were members of the field's Honor Society, who had research or volunteer experience, or who had higher licensing exam scores were less likely to plagiarize.

Faculty perceptions of plagiarism have also been evaluated. In a study at Auburn University, Liddell and Fong (2005) surveyed the faculty of eight academic departments to assess their perceptions of the frequency of plagiarism in the classroom. The authors argued that this is relevant to pedagogy because the way a professor defines and deals with plagiarism has a direct effect on how students understand it and comply with policy. Liddell and Fong's results suggest that faculty underestimate how often plagiarism occurs. One reason given by the authors is that faculty

had extremely varied definitions of plagiarism. With faculty offering mixed messages to their students, it's not surprising that students don't understand what plagiarism is in the first place. Consistent with this, many faculty stated that students don't usually intend to cheat; rather, they are ignorant of the rules. However, Liddell and Fong noted that this does not explain the frequency of repeat offense.

Selwyn (2008) conducted a survey of undergraduates in the UK to assess their commission of online plagiarism. A full 61.9% of students receiving questionnaires admitted to some form of online plagiarism in the past year. Several demographics were found to have significant effects: males plagiarized more than females, students with lower grades more than those with higher grades, and so on. Also, savvier students with computers were more likely to plagiarize online material than less computer-savvy students. Overall, the students' likelihood to plagiarize online materials was closely correlated with their plagiarism of materials in general.

Austin, Simpson, and Reynen (2005) studied acts of academic dishonesty by Canadian pharmacy students, with the goals of developing an instrument for evaluating such cases and assessing how professionals in the field perceives these instances. Senior-level pharmacy students and pharmacist educators were asked to complete a questionnaire regarding their experience with a set of scenarios that may be considered cheating. Over 90% admitted to some form of academic dishonesty (for the educators, while they were students). Also, students on the whole rated the scenarios as less serious offenses than did educators. This leads to the interesting conclusion that students are not further gone than their predecessors—rather, the current educators acted similarly toward academic integrity while they were students as present-day students do now.

The authors went on to describe a provocative hypothesis, stemming from developmental psychology *à la* Piaget. In this school of thought, a child's learning to lie is

a vital stage in her development of her conception of self and theory of mind. Austin et al. suggested that academic dishonesty in the same way is necessary, in a sense, for students to understand academic norms and to flourish as academically honest individuals. This sentiment has been expressed extensively in the literature and will be more carefully explored in section 5.

4.3 Detection

In light of a rising tide of plagiarism, plagiarism detection services such as Turnitin.com (iParadigms, 2011) have arisen to offer a technical way of catching instances of plagiarism. These services use a variety of natural language processing (NLP) tools to venture a probability that a text has been plagiarized.

This field of system development is relevant to the undergraduate experience of plagiarism in that student work is judged based on the output of these devices. We will examine some of the techniques used in plagiarism detection, rooted in programming traditions, and consider a few studies of these techniques' efficacy in the context of real classrooms.

4.3.1 Code Plagiarism

The beginnings of modern plagiarism detection come from the programming community. As a context of constrained text, programs provide an interesting context for analyzing reuse of text. In an early survey of algorithms for detecting code plagiarism, Parker and Hamblen (1989) discussed a number of techniques using a variety of approaches.

Their first example from a then-forthcoming article first removes comments and unnecessary whitespace, under the assumption that most code plagiarists will mostly change these elements to provide an artificial appearance of originality. Next, can-

didate files are compared pairwise using a variety of UNIX shell utilities: *diff*, *grep*, and *wc*. Also, a percentage of character correlation is calculated between each pair of documents. In this way, a rudimentary set of measures can be calculated which indicate similarity between pairs of programs. The implication is that a higher character correlation indicates similar documents, which in the context of student assignments suggests plagiarism.

Other algorithms detailed by Parker and Hamblen (1989) included a large number of measures such as:

- numbers of unique operators and operands, in conjunction with occurences of operators and operands (cf. types and tokens in NLP);
- counts of lines (code, comment, and both), variables, and different types of logical structures;
- an aggregate "program style", incorporating average line length, comments, indentation, blank lines, embedded spacing, use of reserved words, and characteristics of identifiers, labels, and gotos; and
- more theoretically complicated measures involving vertex color in logic maps.

By using both overt and covert program characteristics, these algorithms become quite sophisticated.

More recently, an extended technical report from Queen's University at Kingston (C. K. Roy & Cordy, 2007) discussed a wide variety of techniques and tools used code plagiarism (also termed "code cloning"), as well as the etiology and consequences of code cloning, and extended taxonomies of clone types. The report's primary contribution was an extremely detailed taxonomy of clone detection techniques, along with an exhaustive literature review illustrating each technique. Overall, C. K. Roy and Cordy (2007) provided more than enough history to confirm that code plagiarism

detection has been the primary informing factor for modern text plagiarism detection *à la* Turnitin.com.

The development of new tools for code plagiarism detection is certainly alive and well. For example, a plagiarism detection tool, `pk2`, was developed in response to local needs at Technical University of Madrid (Rosales et al., 2008). In a similar way to the first described above, `pk2` calculates four similarity measures based on the reserved words in the programming language at hand. These were used in a longitudinal study of plagiarism observed in actual classes. Overall, `pk2` was found to be very effective at detecting plagiarism, and flexible at dealing with different languages and assignment situations. The authors noted that, while new students tended to plagiarize at a consistent rate, it was very rare for more senior students to attempt plagiarism, since they knew that `pk2` works and that they would likely be caught.

4.3.2 Text Plagiarism

Similar to code, prose offers a plethora of measures which may be used for plagiarism detection (Clough, 2000). For example, a detection tool may look for changes in vocabulary usage within a document (indicated cut-and-paste plagiarism), usage of punctuation between two documents, textual reuse (Clough, 2000, offers an extended discourse on reuse), syntactic structure, word frequency, readability measures, or dangling references (in-text citations without matching bibliography entries). Statistical measures such as average sentence length may also be appropriate.

Many approaches to detecting plagiarized text have been proposed in the literature. On the premise that most plagiarism occurs at the sentence level, White and Joy (2004) developed a sentence-level detection algorithm incorporated into Sherlock, a plagiarism detector then in development, to detect similar sentences between a pair of documents, as well as an complementary visualization tool for effective use of the

data. The authors rejected use of paragraphs as the unit of analysis, since similarity measures would likely be higher across-the-board on the paragraph level, and also rejected strings of characters (n-grams), as rewording of source material would be more difficult to detect in that context. Documents were parsed and processed into sentence-level sets of words ("sentence-objects"), at which point all the sets from one document were compared with all the sets from another. Similar sentences were linked to each other and scores were then assigned to each document based on its overall similarity to other documents. After the parameters for the algorithm were tuned for best results, Sherlock was tested against two other commercial plagiarism detection utilities in common use. While Sherlock was much slower than the competition—potentially due to the software being an unoptimized prototype—it generated similar results.

Of course, while White and Joy (2004) argued that sentences are the best units, there are other potential units of analysis to consider, each with their own difficulties. In using strings of words (n-grams), for example, it is important to carefully select the most appropriate number of words. Barrón-Cedeño and Rosso (2009) took an experimental approach to this question, using a reference corpus of news articles to compare documents against. After splitting a suspicious document into sentences, and then each sentence into a set of n-grams with n ranging from 1 to 10, each sentence was searched over the n-grams in the document. Barrón-Cedeño and Rosso determined that bigrams and trigrams ($n = 2, 3$) were most effective.

One concern with many NLP-based methods for plagiarism detection is that pre-processing, such as stop-word removal and synonymy recognition, may affect the results of a similarity test. Using a previously published detection method, Ceska and Fox (2009) tested the recall, precision, and F_1-measure of the system with a variety of pre-processing methods. Overall, pre-processing was not found to signif-

icantly improve accuracy, although certain methods such as stop-word removal and lemmatization did significantly reduce processing time at the expense of a small, but significant, amount of F_1-measure.

An alternative approach for plagiarism detection, proposed by Gruner and Naven (2005), is rooted in stylometrics, which are purported to be indicative of authorship. Stylometry "is based on the presumption that every author has a unique style of writing based on subconscious habits, such that authorship could be identified by analysing a variety of stylistic characteristics which are inherent to an available text of sufficient length." Using these methods, the authors proposed to be able to verify that two texts have either the same or different authors. The stylometric patterns used include values such as "Fraction of all sentences with 'a in which 'a is the first word of the sentence", and "All occurrences of 'in' preceding a word unique in the text block divided by all occurrences of 'in which both follow and precede words unique in the text block". All of the patterns are relatively discreet, from which one would infer that a plagiarist would likely not attempt to change their stylometric characteristics. At the time of publication, Gruner and Naven had created an alpha version of the software, with a beta pending.

Another novel approach uses citation analysis to detect plagiarism. Gipp and Beel (2010) argued that, where traditional methods tend to break down when paraphrase or translation are involved, the order and co-occurence of bibliographic citations will likely remain even in light of those complications—in other words, even if a plagiarist rewords or even linguistically translates a source text, he or she will probably not bother to alter what documents are cited, and in what order. This "citation order analysis" was found to be quite effective. The authors planted 20 plagiarized documents in a corpus of 0.8 million scientific publications. By using citation order analysis, 19 of the 20 planted documents were retrieved—the exception being a very

short document, which would also cause problems for other detection systems—plus many other documents with some plagiarism. The authors also noted that this technology could be useful for determining influences on the writer from the ambient literature, even if no direct plagiarism occurs.

4.3.3 Efficacy: does it work?

For all the methods which have been and are being developed to detect plagiarism in an automated fashion, whether these technologies work in the real world is a valid question. Fortunately, there is no shortage of articles directed at that very issue. In this section, I will examine a select few of them.

In a study out of Australia, Warn (2006) detailed a case study where a plagiarism detection tool was utilized to great effect. The tool used was TOAST (*Text originality and similarity (detection) tool*), which matches a target document against the public web, as well as other documents loaded into the system from past and present batches. Out of 74 essays in this case study, 17 were returned by TOAST as having verbatim matches in the matching corpus. Nine of these were dismissed by the instructor as false positives—trivial breaches or technical definitions—leaving eight for further perusal. These included several forms of plagiarism, including general sloppiness, active attempts to slip uncited patchwork "below the radar", and extensive paraphrasing and word-for-word copying from an online summary related to the essay topic. Some of these eight were charged with academic misconduct and presented with evidence, after which they mostly confessed on the spot.

Warn noted several shortcomings of the software. First of all, since the software is only looking for exact word strings (n-grams), there is a large number of false positives which are properly quoted. By the same token, paraphrase cannot be detected by those means. Also, while this software is good for identifying a pool of suspect

documents, they must all be qualitatively examined for intent and extent of potential plagiarism.

Rather than examining the statistical accuracy of plagiarism detection software, Atkinson and Yeoh (2008) considered how students and faculty perceive the effectiveness of the software. At the Curtin University of Technology, *EVE2* was the software of choice. For this study, the researchers executed a series of interviews with lecturers using *EVE2*, as well as surveys of their students and interviews with a few from that group. From the student survey, the researchers learned that students are generally understanding of the use of such software, in that plagiarism is important for the University to address and that plagiarism detection software is helpful to instructors. Also, students did not generally feel that students were being unfairly targeted, nor that *EVE2* created an environment of distrust. The interviews with students corroborated these results.

Staff in Atkinson and Yeoh's sample were generally favorable toward *EVE2*, expressing general satisfaction with the software and its capabilities. However, instructors did note that the results required a lot of manual interpretation and review. This is consistent with Warn's thoughts on the limitations of TOAST (2006). Also, instructors discussed how difficult it is, once plagiarism is discovered, to go through the University's misconduct procedures. This onerous pile of red tape and meetings tended to dissuade instructors from reporting incidents of plagiarism. Also, instructors expressed concern over *EVE2*'s limitation of searching the open web, not print materials or closed databases.

In another assessment of how accurate detection services are, Fiedler and Kaner (2010) tested Turnitin and MyDropBox in terms of correct identification of plagiarized documents, the presence of blind spots in the systems, spread of use in the academic community, and perceptions from the users of efficacy. Upon submission

of unaltered articles from the computer science and education literature as unique student work, both Turnitin and MyDropBox performed abysmally, missing these examples of wholesale plagiarism in up to 31 of 37 cases. The systems did not catch the same articles as plagiarism, either, which implies a difference in what search mechanisms the two tools use. The authors also conducted a survey of academic deans in order to assess how widely these utilities are used and how they are perceived. 74% of respondents indicated that their institutions use plagiarism detection software, and over half of these expressed satisfaction with the services. When asked how well these tools do at what they claim to do, the great majority of respondents believed that the services did at least somewhat well. The authors attributed this overconfidence (in light of their tests) to inflated marketing claims on the part of the detection services. The authors concluded by recommending that more than one approach be used to detect plagiarism, that detection services should only be trusted to detect obvious infractions, that plagiarism checking should be incorporated into standard grading procedures, and that professional societies and journals should be diligent in enabling plagiarism detecting through their databases.

To summarize the sentiments expressed in this section, consider an editorial on information literacy. Badke (2007, Sept/Oct) argued that, while scholars are better than ever at detecting plagiarism, the important task before us is to teach students to reject it as a legitimate option. He detailed three routes to plagiarism—ignorance, laziness, and a flawed sense of intellectual property—from which he proposed that the current model of "thou shalt not" is not nearly as effective as teaching students why plagiarism is bad.

Here, I have only scratched the surface of the literature on plagiarism. C. Park (2003) provided an exhaustive review, detailing how "the literature shows that plagiarism by students is common and getting more so (particularly with increased access to

digital sources, including the Internet), that there are multiple reasons why students plagiarise and that students often rationalise their cheating behaviour and downplay the importance of plagiarism by themselves and their peers."

5

Calling for change

In the context that plagiarism is universally denounced by the academy and labeled a feared enemy, the question has been raised of whether our current definitions of plagiarism are consistent and helpful. Many scholars would argue not.

Students must deal with confusion about attitudes in the academy over intertextuality, the custom of incorporating a variety of texts from different sources into one's own arguments, writings, and ideas. Scholarship is, after all, dependent on the work of others. Also, imitation is generally central to creative work of any kind. Although frowned on in some academic circles, "[to] imitate is not to be derivative; it's simply to admit we derive from what was accomplished by others" (Delbanco, 2005). Originality is hard to come by; in the eyes of Delbanco, imitation is our best hope of creating good work. He argued that "[all] writers are promiscuous", in that any praise-worthy work is unquestionably influenced by a mass of work which may or may not be directly addressed.

There is also an argument that plagiarism is a compliment. The primary motivation of the author, Lethem (2007) argued, is to be read and to influence; credit may even be secondary. Writings are the author's gift to the world, and in a gift economy, payment is meaningless. Lethem also made that point that all writing is influenced by other writings, consciously or not, and "appropriation, mimicry, quotation, allusion, and sublimated collaboration consist of a kind of sine qua non of the creative act, cutting across all forms and genres in the realm of cultural production."

Lethem (2007) drove his point home with a lengthy rhetorical device. Following his 10-page article, he provided a 4-page "key" which exhaustively details the source of every quote, paraphrase, allusion, turn of phrase, and influence, no matter how loosely connected. To underscore, Lethem even followed that with a "key to the key" in the same style. His point, of course, is that all writing, no matter the style, is influenced by external ideas, even if to actually cite them in detail would be ludicrous.

If all writing is influenced by other writing in uncitable ways, and if it is acceptable to allude to a work without citing it, then what precisely *is* plagiarism? In a series of interviews with faculty and students, Crocker and Shaw (2002) found a vast range of how plagiarism is conceptualized. For one, distinct disciplines have varied expectations with respect to plagiarism; the social sciences and humanities were found to guard precise phrasing more readily than the sciences. Scientists noted that often, definitions are definitions no matter where you find them, so citation is less of an issue.

Crocker and Shaw also uncovered a number of conflicting attitudes among different people, or even from the same respondent. First of all, plagiarism was often said to be difficult to detect—so frequently, in fact, that the authors suggest that the frequency might be a fable based only in the general understanding—but copying was also declared "easy to detect", in that instructors can tell when students engage in "patchwriting" (cf. Howard, 1995, 1999), in which students develop a pastiche of borrowed terms and phrases.

Plagiarism is also treated alternatively as a crime or a developmental phase. Crocker and Shaw talked with many people about how plagiarism is against policy, but is in some sense a step in the process of academic socialiation. There is further disagreement over why plagiarism is bad in the first place; copying without attribution is against the rules, yes, but it is also an ineffective rhetorical device which

undermines the goals of academic writing. Finally, a double standard is held with respect to the status of quotations. On the one hand, words taken directly from a source should be surrounded by quotation marks, and that lends credence to an argument, but on the other, there is an ideal image that the best scholarly work has no quotations. Certain disciplines frown on using the words of others.

Crocker and Shaw, having uncovered marked disagreement in the academy over plagiarism, suggested a two-pronged strategy: first, students must be taught that an accusation of plagiarism will not be taken lightly and can have dramatic repercussions, but at the same time, academics must gain an understanding that "apparent plagiarism does not necessarily mean a desire to cheat", and that motivation is a key factor in determining consequences for plagiarism.

Another study of faculty perceptions of plagiarism revealed other interesting conflicts related to postmodernist dialogue. In interviews with faculty, A. M. Roy (1999) found that plagiarism was defined around two themes: stealing and deceiving. She relates these to the three postmodern elements of rhetoric: *ethos*, *pathos*, and *logos*. In A. M. Roy's view, the stealing aspect of plagiarism is a violation of *ethos*, the ethical stance of the author him- or herself; duplicitousness is at odds with that stance. Similarly, deception violates *pathos*, which embodies the reader's perception of and identification with the author. The reader no longer knows who the author really is, and he or she is baffled at even having to ask such a question.

The third aspect, *logos*, does not even come into play. *Logos* represents the text itself, and in this case, faculty view the text as a moot point when it is called into question by plagiarism. What the text is trying to communicate no longer matters in the shadow of plagiarism.

Faculty expressed a disorientation to A. M. Roy surrounding the definition of plagiarism. When students, they viewed plagiarism as "monolithic", a known quantity.

But as they grew into scholars, they found plagiarism to be "multifaceted at the very least and perhaps not merely multidimensional but really more than one entity, thing, concept, event." A. M. Roy (1999) argued that, where the new generation of scholars consider certain plagiarisms a liberation as the author-text-reader boundaries blur, the older generation considers it a crime.

But is this criminalization a fair attitude? Zwagerman (2008), to the contrary, put forth the idea that "by intensifying efforts at surveillance and punishment, the current crusade against academic dishonesty is a far greater threat than is cheating to the integrity and the ideals of academic communities." He suggested that the academy has committed an error in judging causality; rather than increased incidence of plagiarism drawing attention, it's more likely to Zwagerman that by placing the spotlight on plagiarism, more episodes have come to light. By placing this glare on plagiarism from a moralistic perspective, the academy has instilled a "childlike compliance to authority."

As opposed to cheating necessarily being a crime, Selwyn (2008) argued it as a required means of survival in a difficult academic culture. In a series of interviews with undergraduate students, Selwyn uncovered a sentiment that online plagiarism is not only more prevalent, but considered justifiable. Students expressed that, with lower risk of being caught, plagiarism of electronic resources serves as an escape valve of sorts for the overworked student. In response to this, Selwyn suggested that universities adopt a more holistic approach to addressing plagiarism, involving "a shared responsibility among the students, staff and institution." In this way, the author stated, the problem will be drawn out from the roots, reducing the need for "counter-surveillance" as found in plagiarism detection systems.

Plagiarism has been defined in so many ways that many authors question the variety of interpretations. The concept of stealing words themselves has even been

called into question. Bouville (2008) laid out a philosophical argument to this effect, stating that words themselves cannot be classified as intellectual property in most cases, excluding fields whose product is words, such as literature. Bouville noted that scholars are in the business of "creating new knowledge", new ideas; words are merely a medium of expression. The philosopher made the cogent point that paraphrasing is encouraged in the academy, which implies that exact wording itself is not crucial to intellectual property.

Theft of words, Bouville continued, does not in itself harm the original author, benefit the plagiarist, or damage the reader's ability to trace ideas—of course, in absence of the theft of ideas. (Whether the two are extricable is futher addressed under each point, but the details are beyond our scope.) The author then suggested a criterion for determining whether damage has actually been sustained:

> [If] including proper citations would have been a fatal blow this instance is clearly plagiarism and clearly wrong; otherwise, that a work is (akin to) plagiarism does not mean that it should be withdrawn and the author fired. If proper citation would have had little impact on the paper, lack thereof should also have little impact. (If it is possible to rewrite an article–without changing its substance–to make some citation unnecessary then only words had be borrowed; otherwise, one must be using an idea from this work and a citation is required.)

Bouville (2008) also noted a definition which has arisen from the development of plagiarism detection systems. In working with n-grams, developers have stumbled on various ns which work best for their systems. He offered one example in which a developer found that $n = 7$ was most predictive of plagiarism using their system in conjunction with a gold standard coded by hand. Bouville pointed out that it is very easy to transistion from "matching 7-grams are good evidence that plagiarism may have occured" to "plagiarism occurs when 7-grams are matched with other sources."

In conclusion, Bouville (2008) stated that the way in which students are taught to write diverges dramatically from how scholars write: students are taught to avoid

plagiarism, whereas scholars cite for utility. As long as "students are not expected to accomplish anything positive, only to avoid punishment", their work cannot fully mesh with the ways in which scholars perceive scholarship.

5.1 Patchwriting and Policy

Several scholars in recent years have explored the concept of patchwriting and its applications to the student experience. Here, I will examine two: Rebecca Moore Howard and Susan Blum.

Howard is credited with coming up with the term "patchwriting", which refers to "copying from a source text and then deleting some words, altering grammatical structures, or plugging in one synonym for another" (1999, p. xvii). This practice, which by traditional definitions is undoubtably plagiarism, has been recently recognized as a necessary part of the acculturation process for students new to a field. Howard (1999, p. 14) argued yet further that "all the writing that we all do all the time is patchwriting" and that, on some level, we all know that. Recognition of patchwriting is used as a way to distinguish scholars from not-yet-scholars—whether one is in the club, so to speak. By patchwriting, students label themselves as outside the fold, and they are punished for their infraction.

Far from a deliberate violation of the rules, in most cases, patchwriting is a necessary step in acquiring the vernacular of a scholarly dialogue, a "primary means [for us all] of understanding difficult texts, of expanding one's lexical, stylistic, and conceptual repertoires, of finding and trying out new voices in which to speak" (Howard, 1999, p. xviii). It is imitation (cf. Delbanco, 2005) with the goal of joining a conversation. In that light, Howard argued at length, patchwriting should not be labeled plagiarism.

Howard (1995) also makes extensive recommendations on policy in light of patch-

writing. Specifically, she sought to form a compromise between traditional notions of text and contemporary theory which has a drastically different notion of self (cf. Scollon, 1995, on identity in authorship and plagiarism). Primarily, Howard wanted policy to consider the intentions and motivations of an accused plagiarist, in addition to the actions actually committed. The student's experience with the field's discourse, the sources assigned in a course, and myriad other factors also bear weight. Howard's argument was condensed into a proposed policy which distinguishes three types of plagiarism—cheating, non-attribution, and patchwriting—with distinct recommendations for sanction in each case. The policy also includes specific recommendations to students and faculty on how to cope with sources and different types of plagiarism. This policy and its complementary pedagogy were further explored by Howard (1999, chs. 8–9) in her groundbreaking book, *Standing in the Shadow of Giants: Plagiarists, Authors, Collaborators*.

Similar conclusions were reached by Susan Blum, a linguistic and cultural anthropoligist. After teaching in the university for 20 years, Blum became more and more sure that her education and experience had eroded a gulf between her and her students. Specifically, she wanted to know more about how the undergraduate culture influenced their perceptions of and motivations for plagiarism. Following three years of one-on-one interviews with students, facilitated by Blum and a team of four undergraduates, Blum came to profound conclusions about the undergraduate experience, the many demands on students' time, the various ways in which modern culture affects principles of authorship and plagiarism, and what those things mean for pedagogy and the academy.

Blum began by explaining how intertextuality is alive and well in undergraduate culture, under the strong influence of the internet. Quoting from a variety of sources in myriad contexts is one way in which students express community and mutual

understanding. A student is expected by his or her peers to know what works are being quoted without a need for formal citation. This does not imply, however, a disregard for sources. Students must be careful to quote works which are known, but not so much so as to be trite. If a quote is part of a common text understood by students, it would be inappropriate to mention the source.

In light of the intertextuality practiced by students in their social lives, undergraduates express confusion and concern over matters of citation in their academic work. The academic notions of originality, authorship, and the like, are rejected by college students. Students can be made to understand that there are rules and that there are consequences for breaking them, but the underlying academic attitudes of those rules are foreign to today's college student and underline a growing chasm between faculty and students.

Blum attributed much of the change in attitudes toward ownership and authorship of ideas to a shift in the concept of the self. She invoked a distinction between two selves (Blum, 2009, ch. 3): the authentic self, which exists as a solitary figure, jealous of its own ideas and thoughts, claiming that all it expresses its its own, true to its character, and unconcerned with others; and the performance self, which is mutable depending on the circumstances and company it finds itself in, conforming to social expectations, and fiercely collaborative and outward-directed. The line between these two selves aligns closely with the distinction between the academy's and the student's attitudes toward ideas. While both attributes exist within a single person, one may come to the forefront in a given situation.

Based on the collective, collaborative nature of the undergraduate culture, Blum argued that the performative aspects of self are chief in the student's posture toward both work and play. Students find it odd to work alone, and this is not surprising given how collaboration has been encouraged in our classrooms. In a variety of con-

texts both inside and outside of the classroom, "[the] solitary author for them is not necessarily the default case" (Blum, 2009, p. 89). The concept of a collective self makes it difficult for students to wrap their minds around a world where ideas are not free for the taking. Also, students live in a high-pressure world not of their own making. They are pressured to strive for excellence in all things from childhood through college. Given the many demands placed on them by parents, friends, classmates, and the university, Blum found it unsurprising that students are driven to find an escape valve, which for many is plagiarism to ease the load of writing.

At this point in her argument, after examining the societal, cultural, and academic context in which undergraduate students find themselves, Blum began to deconstruct how plagiarism is addressed in the academy. In agreement with the other authors I have examined to this point, Blum (2009, p. 149) found two primary modes of approaching plagiarism: as a sin or as a crime.

Honor codes seek to define cheating in terms of an ethical obligation. Students are required to profess their commitment to personal academic integrity, as well their commitment to not condone others infractions. (See D. McCabe & Treviño, 2002; D. L. McCabe & Pavela, 2004, May/June for an extended discussion of honor codes and their application.) The concept of "academic integrity" is central to this approach. Blum discussed with her interviewees the concept of "integrity" in general; while students generally accepted integrity as a central aspect of their character, they had differing expectations of what that means. For "academic integrity", these concerns were yet more emphatic. Students typically "echoed the official line", but failed to elaborate beyond that which they'd been indoctrinated with. Also, where the rules were hard and fast, students were apt to bend rules depending on their circumstances—namely, their commitment to their friends. While honor codes usually call for students to turn in peers who violate the rules, students almost never do

such a thing. Their allegiance is first to their friends, and second to their school.

The other approach emphasizes rules and punishment for violating them. Whereas honor codes appeal to students' morality, regulations appeal to students' fear of retribution. Blum countered this approach by pointing out just how often rules are broken in every possible context. For college students, there are rules against drinking, illicit file sharing, and, yes, plagiarism, but those rules are treated as either to "follow reluctantly or disregard because [students] challenge them" (p. 161). The author also points out that if students follow the rules merely out of a fear of the stick, rather than because they understand the logic behind them, then we have failed to instill the "experience of higher education" that we intended (p. 163).

These problems are not solved by a mere admonition to "cite your sources." The guidelines are vague and they are not followed uniformly across fields or even across scholars. The rules are often at odds with each other, they were defined in a different cultural context than we have now, and they conflict with students' experiences with attribution of quotes and ideas.

So what is the alternative? Blum suggested a third way which begins with honesty. In her apt words, "students are excellent detectors of hypocrisy" (Blum, 2009, p. 174). This honesty begins with admiting that full enforcement of the rules as they stand is both impractical and never carried out. The rules are articifical to a degree, and their application is dependent on our current academic culture. Blum rejected that we should dismiss students' culture, try harder to ingrain the rules in the minds of both faculty and student, or give up on students based on their many pressures; rather, she suggested that we should struggle to understand how technology and culture are changing and how they affect education. Then—and only then—should we recontextualize plagiarism.

At the end of her treatment on plagiarism and college culture, Blum offers a

series of practical steps which colleges and universities can engage in as they move toward new understandings of plagiarism, ranging from the basic to the monumental (pp. 177–179). These include:

- holding open forums on these topics, acknowledging that issues of plagiarism are complex and require the opinions of faculty, administrators, and students;
- fostering discussion of higher education and its implications ("Show that students with lower grades can nonetheless live happy and productive lives.");
- comparing intertextual student practices with formal citation practices, with an eye toward acknowledging differences and how each is appropriate in certain contexts; and
- distinguishing between "cheating" and "plagiarism" in its different forms, including gradations of seriousness.

The main takeaway from Blum is that the academy and students have wildly different notions of credit, the self, and ownership. She concluded with the following vision (p. 180):

> I see plagiarism as a direct result of conflicting claims on students' diffuse attention, which have bee compelled by those who love and cherish them most [their parents] [. . . .] In this misguided effort to pack more and more into a life already filled to the brim, the overflow valve is the shortcut into plagiarism [. . . .] The only genuine solution is to lower the water table and return the youth of our society to drier, calmer ground, where they can hop, skip, and jump rather than cut, paste, and graduate.

Throughout these many voices calling for change in how plagiarism is approached in the academy, the same themes come up time and again. There is a sharp disconnect between how faculty and students view plagiarism and citation. Postmodern concepts of ownership and authorship are embodied by how students approach the

sharing of ideas—and how the academy does, consciously or not. The rules are disagreed upon within all groups, and it is uncertain how the letter of the law applies to today's culture. Overall, the academy is called upon to re-evaluate its stance toward plagiarism and to communicate its uncertainty to students.

6

Plagiarism Pedagogy

Although many scholars have suggested that academic institutions revisit their stance on plagiarism, pedagogy has not caught up to this development. The primary pedagogy surrounding citation comes from the perspective of plagiarism. In this section, I will consider a number of studies about the pedagogy of plagiarism, from both empirical and anecdotal perspectives. First, though, I will take an aside into the struggles of international learners getting accustomed to how plagiarism is thought of in Western education.

6.1 International learners

In Western educational institutions, it is often assumed that, modulo some instruction, everyone has similar ideas about intellectual property and ownwership. It has been noted in the literature, however, that different cultural and educational practices in Eastern countries—usually defined as Asia, but sometimes including the Middle East and Mediterranean—cause students from that background to have differing ideas of how knowledge is passed from person to person and who owns those ideas. (Of course, in section 5, I considered how this may be false for the younger generation of native Western students as well.)

In some ways, this knowledge has backfired: Pennycook (1996) mentioned situations where a professor might grade native English speakers differently from non-

native speakers. A particularly excellent turn of phrase from a native speaker is met with praise; the same phrase from a non-native speaker is considered suspicious. In this way, "we become detectives in search of evidence that some chunk of language has been illegitimately used."

Pennycook was careful to point out that a "crude East/West distinction" is not sufficient to express the difference in cultures and educational mores across the globe. The terms 'Eastern' and 'Western" are merely a lexical convenience. His views were based on personal experience with students of diverse backgrounds, and he noted that educational models are a significant part of the picture.

In the author's experience with Chinese students in a Western institution, he found a significant emphasis on memorization in Chinese education which is not present in Western educational systems. Language tends to be understood in Eastern cultures to map to realities—in a sense, the words stand for real situations in a much more literal way than we imagine in Western cultures. Memorization is treated as a means of improving one's understanding of a text.

The international students who Pennycook interviewed displayed a nuanced understanding of plagiarism and citation in a similar fashion to Western students. Plagiarism is considered in the context of time pressure (cf. Blum, 2009), and students comment on the division of words and ideas (cf. Bouville, 2008). In the testing cultures of China, students are asked to merely answer the question; the precise wording and means to an answer are irrelevant. Several students also noted hypocritical behavior from lecturers; what is different about a lecturer using words from a textbook without any form of citation?

As a final note, students mentioned to Pennycook (1996) that their non-fluency with English serves as a barrier which encourages plagiaristic behavior. They stated that, unlike their native languages, they feel "no ownership over English". In this

sense, they felt that to express something in their own English words is an impossible task, because they feel that English is not their own.

This sentiment is echoed at several points in the literature. A Turkish physicist accused of plagiarism wrote a letter to the editor of Nature (Yilmaz, 2007) expressing that he and his peers were merely "borrowing better English." In this context, the accusations were over sentences in the author and his colleagues' introduction to an article which were lifted from other works. Yilmaz argued that, in lieu of being able to write fluid, expressive English, he and his peers regularly do such things, in an effort to improve the lucidity of their arguments and accessibility to an culture where English is the *lingua franca*. He pointed out that results, not introduction, are the core of any paper, and so claims of plagiarism are highly exaggerated.

In a similar vein to Pennycook, LoCastro and Masuko (2002) performed an ethnographic study which explored three possible explanations for plagiarism by international students: deliberate theft, differences in culture, and a lack of skills in English writing. Over the course of examining a number of senior theses, other assignments, questionnaires, and interviews, the authors found that an explanation from culture—that students from Asian countries had been taught that copying verbatim is acceptable—is insufficient. Many themes arose which resonate with Blum (2009) and her work on American students, such as time constraints. The authors concluded that it is important for educators to consider not only the facts of an accused plagiarism, but also the students cultural and educational background.

A recent article from the biomedical literature perhaps expresses it best (Heitman & Litewka, 2011): "The goal of instruction [. . .] cannot be simply to avoid plagiarism." Rather, in teaching students of differing educational backgrounds, acculturation to the local academic climate should be a core goal.

6.2 Empirical studies

A large number of studies have considered particular methods of teaching students to avoid plagiarism. Workshops on plagiarism, homework assignments, and online tutorials have all been considered and studied. Here, I will only examine a few key examples from the literature.

Landau, Druen, and Arcuri (2002) split a sample of undergraduates into four groups in a factorial design. Participants were given a paragraph and asked to determine whether information had been plagiarized in it. One group received feedback on whether there was plagiarism and how it can be determined. Another group was given a brief definition of plagiarism with examples. A third group received both interventions, and there was a control group which received neither. Overall, any intervention beyond a mere "admonishment to avoid plagiarism" was effective in sensitizing students to the signs of plagiarism. The interventions were quick and effective.

Schuetze (2004) discussed the effect of a brief homework assignment on understanding of plagiarism and citation. Overall, students in a class receiving homework and a class presentation on plagiarism and citation style performed better in their own term papers and on measures of plagiarism knowledge. This corroborates Landau et al.'s conclusion that effective interventions need not be very time-consuming.

A study of first-year undergraduates in a geography class bore out expectations from Badke (2007, Sept/Oct) that explanations of why plagiarism is bad are more effective than curt policies without reason. (See the conclusion of section 4 for details.) Ellery (2008b) wanted to study why students plagiarize and whether certain demographic groups are more likely to plagiarize. None of the demographic factors were found statistically significant. It turned out that a full quarter of the observed students plagiarized, even with the knowledge that their work would be inspected.

Mostly, they expressed confusion at their plagiarism. However, the underlying cause, Ellery argued, was that students did not place value on avoiding plagiarism. She concluded that interventional pedagogy must be a priority at all levels of education, and that a "combined carrot and stick approach"—that is, feedback and support linked with threat of discipline—is called for. In a separate paper, Ellery (2008a) discussed the students' use of electronic resources separately, concluding that the web and other digital media make plagiarism easier.

A longer-term intervention is detailed by Barry (2006). In this study, students were given 6 weeks' practice in paraphrasing and were asked to define plagiarism in both a pre- and a post-test. Though students expressed the concept of stealing words as plagiarism in both the pre-test and the post-test, the post-test responses included much more acknowledgement of using others' ideas and not giving credit as other forms of plagiarism.

Paraphrasing, however, was not found to be as easy to teach in other ways. Jackson (2006) described the development and implementation of a web-based tutoral on plagiarism, citation formatting, and paraphrasing, constructed by the library at San José State University. The tutorial was implemented broadly in the curriculum and assessed for efficacy based on a pre- and post-test incorporated into the tutorial. While students gained a good understanding of plagiarism, its penalties, and citation style, students did not do as well with paraphrasing. The vast majority could not identify what was wrong with paraphrases which were incorrect in a variety of ways. Jackson recommended that reinforcement of proper paraphrasing technique be covered more extensively in classes. However, she was satisfied with this tutoral as a way to improve student understanding of plagiarism.

In another self-administered module, Belter and Pre (2009) offered instruction on defintions and avoidance of plagiarism, definitions and avoidance of cheating, and

the penalties for misconduct. Students in several sections of an abnormal psychology course were split into a control group and an experimental group. Following the experimental group's completion of the module, students were required to turn in a normal course assignment. These were assessed for suspicious passages using Turnitin, and the authors followed up with a manual Google search of the passages to determine which were, in fact, to be judged as plagiarism. Overall, the experimental group had a much lower incidence rate of plagarism than the controls. About 26% of the control group's papers were found to involve plagiarism; only about 7% of the papers from the experimental group had plagiarized material. Further, the plagiarized work from both groups was found to correlate with work of a lower quality in general.

In a slightly different vein, Gibson and Chester-Fangman (2011) executed a survey of academic librarians to assess how involved they were with addressing plagiarism at an institutional level and in library instruction and reference. The majority of respondents reported significant work assisting students with the mechanics of citation and proper style guide use; 70% had been approached by students at least once a year with plagiarism-related questions; and three-quarters of respondents had incorporated plagarism and avoidance of plagiarism into instruction sessions. Far fewer, however, had been involved in plagiarism policy-making and investigation at an institutional level. Only 30% had been approached by departments to assist with plagiarism prevention, 20% were asked to do workshops on academic honesty, and 30% had been called in to help faculty deal with suspected cases of plagiarism. The authors performed the survey as a first thrust into exploring how librarians are incorporated into institution-wide plagiarism initiatives, and plan on continuing their work with these results as guidance.

6.3 Anecdotal studies

A few authors, rather than describing formal research on pedagogy, have offered their experience and suggestions on ways to approach plagiarism as a topic of education in the classroom.

Whitaker (1993) described her approach to teaching students about plagiarism in the context of a composition course. She prefaced her description with a lamentation of how students approach essay-writing:

> Pressed to distinguish between plagiarism and legitimate forms of imitation, they become confused. Asked about accepted conventions for acknowledging the use of the words or ideas of others within their writing, first year students are flustered. Having been taught that the ideas of authorities are preferable to their own ideas, these students subscribe to the notion that the essay is a crazy quilt of quotations in which the acquisition of authorities—like scraps of fabric for patchwork quilting—is the primary task.

It is notable that Whitaker's generalizations closely resemble the definition and context of patchwriting offered by Howard (1999).

Whitaker (1993) made a point of addressing acceptable use of sources and collaboration in the first week of class. Students were instructed on the distinction between accepting a friend's suggestions for a paper and wholesale incorporating a phrase or paragraph written by another person. Students were also given hands-on experience by incorporating a portion of a popular article into a paper of their own. Whitaker also passed out marked passages from magazines involving basic facts, and asked students to write out a proper quotation or paraphrase of their assigned passage. Their solutions were compiled and discussed in class as a way to correct miconceptions about proper quotation and paraphrase.

Vosen (2008) wrote of a pedagogical unit she designed around Bloom's Taxonomy of the cognitive domain. She described how she led her students through definitions

and discussions of plagiarism, practice with citation style, and debate on the ramifications of plagiarism. After using this technique for several semesters, Vosen raved about how her students come out of this 5-class unit more prepared than ever to discuss what plagiarism is and how to avoid it.

From a theoretical perspective grounded in personal experience, Fischer and Zigmond (2011) discussed common impetus for plagiarizing—their reasons mesh well with those described in section 4—and suggested a number of techniques for introducing the topic of plagiarism to the classroom and dealing with pedagogy of plagiarism avoidance. Their techniques include:

- formalizing a policy and facilitating open discussion about it at the beginning of the semester;
- explaining the reasons to avoid plagiarism, including its status as theft, denial of credit to a source, limitation of students' absorption of class material, and academic and legal repercussions from being found out;
- illustrating the rules with examples what and what not to do;
- suggesting a process of checklists or deadlines to break the process of citing properly into manageable steps;
- encouraging students to study things they are interested in;
- backloading the work of citation to the end of paper writing, while leaving placeholders in the appropriate parts of the text while students are writing;
- offering clear guidance on when a citation is necessary and when it can be skipped;
- encouraging students to track down the originator of an idea or result, rather than using secondary sources;

- suggesting the use of reference management software to ease the load of mechanical formatting; and
- making plagiarism detection software available to students so that they can check their work before their professors do.

This exhaustive list provides an excellent summary of the techniques which are commonly used in teaching students about plagiarism and ways to avoid it. Regardless of whether there is a more effective strategy to teach students about proper citation practice, these tools have been widely adopted in a variety of fashions throughout the academy.

7

Learning Theory

In relation to the discussion to this point of the undergraduate experience of citation and plagiarism, it is worthwhile to consider how the existing pedagogy relates to theories of learning and motivation. The scope of this review will be limited to a basic overview of some core theories relevant to citation pedagogy, but for a fuller treatment of learning theory, the summary report of the Committee on Developments in the Science of Learning (2000) offered an exhausive review of the learning literature.

The aforementioned report (Committee on Developments in the Science of Learning, 2000) provided three high-level assertions which are broadly attested in the education literature:

1. Because students enter the classroom with preconceived notions of how things work, these understandings must be addressed in pedagogy. If not, students will either misunderstand what is taught or merely learn what they need for the test, while retaining their misconceptions outside of that scope.

2. For students to acquire competence, three conditions must be met: students must deeply understand the facts presented, these facts must be situated in a "conceptual framework", and students must be able to construct that knowledge efficiently for recall and use.

3. Metacognition is an invaluable skill for students to "take control of their own learning", which involves defining their own goals and tracking their own progress.

In section 5, I discussed how Blum (2009) conceives a "third way" which incorporates these concepts. For citation to be readily understood by students, it must be approached as a set of skills to be learned in context of scholarly mores, with open acknowledgement of the arbitrariness of some of the formal rules. In this way, students are enabled to understand the scholarly context of citation, to acknowledge their preconceptions, and to construct their own theory of citation based on what they need to know to succeed in their academic work. In this way, Blum's work supports these principles from the education literature.

To better grasp the impetus for these constructivist views, I will more carefully address the Vygotskian theory of the Zone of Proximal Development, how it is applied in scaffolding, and what the literature says about motivation.

7.1 The Zone of Proximal Development

According to Vygotsky, static assessment of skills, focusing solely on what a student can do on his or her own, is inherently flawed. He introduced the idea of a two-factor assessment which incorporates the student's potential abilities. (Vygotsky, 1978) The zone of proximal development (ZPD), as he termed it, is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." In other words, the ZPD is the range of ability bounded by what a student can do alone and what a student can do with assistance.

This foundational theory sparked a vast body of educational literature. The original ZPD was mainly directed at how children learn, and the education literature followed this lead, but researchers have extended it in application to adolescent through adult learners. We will discuss these applications further in section 7.4.

7.2 Scaffolding

One practical application of the concept of the ZPD is the idea that instruction should have an eye toward providing structures which assist the student for a time and can be removed as the student acquires competency: scaffolding. In one expression (Cheyne & Tarulli, 2005), "the developmental *telos* of scaffolded instruction is independent task mastery or, in terms of the metaphor, functioning with the external scaffold withdrawn." Scaffolding works on the premise that, by directing instruction toward compentencies lying within the ZPD, a student's abilities both without and with assistance will grow, thus shifting the ZPD to higher levels. The role of the tutor in this theory is to evaluate a student's current competencies, assign tasks which are beyond the student's individual competency, and support the student's efforts through dialogue.

Cheyne and Tarulli (2005) made the point that for scaffolding to be effective, the tutor must have "an agenda" in mind to inform instruction. This agenda provides the goals which the tutor seeks to help the student achieve. In the context of a controversially applied topic such as citation, this agenda becomes essential in defining the direction pedagogy is to take.

7.3 Motivation

Another core aspect of pedagogy is motivating students to learn. Motivation is a complicated topic deserving of its own literature review, but in an effort to provide some central concepts, I will examine it briefly here. Pintrich and Schunk (1996) provided the basic definition that "[motivation] is the process whereby goal-directed activity is instigated and sustained." This variable has a direct effect on how well students learn new things, retain learned information, and apply knowledge to new situations.

A distinction is to be made between intrinsic motivation—"engaging in an activity for its own sake"—and extrinsic motivation—"[engaging] in an activity as a means to an end" (Pintrich & Schunk, 1996). While related, these two forms of motivation are not mutually exclusive, and they rely heavily on context and person. This distinction is relevant because there is discussion in the literature about student motivation for schoolwork and, specifically, citation (viz., Clarke & Oppenheim, 2006; Head & Eisenberg, 2010).

7.4 Applications

In context of higher education, many studies have examined the relevance of the ZPD to pedagogy. Various interpretations of the theory have taken root in the context of education psychology, including scaffolding (as discussed), cultural interpretations, and collectivist models (cf. Allen, 2005).

I will discuss several studies here which consider the merits of different educational approaches. Alfieri, Brooks, Aldrich, and Tenenbaum (2010) performed meta-analysis of 164 studies involving a discovery-learning approach. Discovery learning, although an ambiguous term, has the common thread of requiring the learner to independently generate the target lesson based on a set of given materials; notably, none of those materials explicitly contain the target information. Discoverly learning can take place with a range of degrees of intervention by educators, and that intervention can take a variety of forms (e.g., examples or manuals, per Alfieri et al., 2010). The author executed two separate meta-analyses; the first examined unassisted versus assisted forms of discovery learning, and the second considered "enhanced" forms of discovery learning as compared with other conditions. These methods were defined by an extended taxonomy of instructional techniques which will not be explicitly discussed here.

Overall, explicit-instructional tasks were found to be more effective than unassisted techniques. The second meta-analysis, in addition, found that "enhanced-discovery tasks requiring learners to be actively engaged and constructive" were yet more effective than the alternatives. In particular, Alfieri et al. (2010) suggested that the best approaches involve: requiring explained reasoning for learners' ideas, along with explicit and quick feedback; provision of worked examples; or a scaffolding approach.

In an attempt to connect motivation, self-regulated learning, and performance, Pintrich and De Groot (1990) gathered survey data from 173 seventh-graders, along with performance data from classwork. Three distinct motivational metrics were analyzed: self-efficacy, a measure of "perceived competence and confidence"; intrinsic value, related to students' interest in and perceived importance of classwork; and test anxiety, measuring worry and cognitive interference related to tests. Also, two cognitive scales were measured: cognitive strategy use, dealing with rehearsal, elaboration, and organization; and self-regulation, concerning metacognitive strategies and effort management. In brief summary, the motivational components were found to be closely correlated with cognitive engagement and academic performance.

Most relevant to the topic of this review, Pintrich and De Groot (1990) found that intrinsic value was related to cognitive strategies and self-regulation. This finding was interpreted to mean that "[students] who were motivated to learn the material (not just get good grades) and believed that their school work was interesting and important were more cognitively engaged in trying to learn and comprehend the material." This work was supported by Lee, Lim, and Grabowski (2010), who examined computer-based learning environments and found that generative learning strategy prompts and metacognitive feedback improved recall and comprehension.

These theories have begun to break into the library literature. In a thought piece

on the intersection of sociocultural learning theories and informaton literacy, Wang (2007) explored collaborative learning's place in library instruction. While much work had been done on collaborative learning in the classroom (e.g., Rodríguez Illera, 2001; Green, 2005; Havnes, 2008, Wang considered how this work applies to the library. First, the author pointed out that, while universities have begun to accept some of the burden in information literacy training, libraries are still the primary providers and as such need to incorporate modern conceptions of learning into bibliographic instruction. Wang was careful to mention that "[the] information literacy teaching focus in higher education needs to shift from recommending resources to critically selecting and evaluating resources." In this light, sociocultural learning theories are advanced as a model for the field. The author incorporated the Vygotskian view that "learning is embedded in social events", which implies that collaborative learning is an optimal condition for learners to try out new ideas in a social context and to explore new concepts.

Wang (2007) went on to consider several models of collaborative learning which are appropriate for the library classroom:

- the jigsaw model, which splits a class into groups which each discuss a unique part of the discussion topic, and then come back together to teach the other groups what they have discovered;
- the reciprocal model, in which the teacher acts as a facilitator for group discussion, first introducing a topic, then letting the students discuss the topic, and finally summarizing what has been said and introducing a new topic; and
- collaborative peer groups, in which small groups of students are given a problem to solve or a resource to explore among themselves.

By using these methods, Wang suggested, teachers become "co-learners", students

become active leaders and discussants, and the community-of-learners gains a better-developed ZPD and fuller development.

8

Concluding Thoughts

This review has covered the main points of the academic literature surrounding the undergraduate experience of citation and plagiarism. In this final section, I will review the driving themes, discuss some of their implications, and consider future work which may advance this literature.

8.1 Summary

Citation and plagiarism are hotly debated topics in academic circles. In the literature on these topics, there is a marked absence of discussion on citation in the absence of plagiarism; the focus in the academy is certainly on what plagiarism is, why it happens, and how to stop it. However, a small amount of work has covered tutorials for teaching citation styles, the library's role in teaching citation, and why citation is a useful part of scholarship.

Work on the mechanics of citation, however, is much more frequent. The literature makes claims about the types of sources which students select for their papers, the occurence of errors in citation, and details of how certain styels are used and why these can be confusing to students. In this literature, it is said that, while students prefer online sources as available, they tend to treat them similarly to print sources. However, citation style is a sticking point with electronic sources; students are more comfortable formatting print citations than electronic.

Plagiarism certainly takes the spotlight in the literature which fell in my scope. For all the emphasis which the academy places on preventing plagiarism, it is notable that no one can seem to agree on a definition for the term. Generally, it is agreed that plagiarism involves two aspects: using another person's words or ideas, and failing to provide credit, thus implying that the words or ideas are one's own. Occurence of plagiarism is considered frequent, no matter who you ask, and it is likely that faculty underestimate how much plagiarized work passed over their desks. Efforts to prevent plagiarism include the development of plagiarism detection systems, which are purported to automatically find likely cases of plagiarism. Although these systems are becoming more and more accurate, there are concerns from certain corners over whether these are the right tools for the job.

Although scholars are concerned about the occurence of plagiarism, there is a rising movement to reconsider how plagiarism is viewed and defined in the academic community. Multiplicity of definitions, along with postmodern concepts of originality, authorship, and intellectual property ownership make this an open question. Some scholars have argued that the academic crusade against plagiarism is more damaging to scholarship than plagiarism as it stands could ever be. The concept of patchwriting has challenged the common concept of plagiarism, as it is purported to be a necessary and desirable step along the way to finding one's voice in an ongoing academic dialogue. Further, the culture of college in the internet age has dramatically altered how students view credit, the self, and ownership; as a result, there is an growing gap between the academy and students on this important issue. As such, many scholars have called on leaders to start conversations about plagiarism and what it is in today's context.

Still, plagiarism, as opposed to citation, is still a driving pedagogical force. This is a significant problem from an international perspective, as international students be-

come more and more common in Western universities, bearing their own cultural and educational backgrounds which do not necessarily mesh with their host institutions' ideals. A great deal of work has been dedicated to developing pedagogical techniques, tutorials, and curricula to deter students from plagiarizing. Generally, these tools are met with success, so long as students are engaged in an open conversation about what plagiarism is and how they can avoid it.

Finally, I pulled in several concepts from the literature on learning, dealing with how students come to understand new material. Broadly speaking, instruction is considered most effective when students' preconceptions are addressed, students are allowed to scaffold into new concepts, and students are permitted metacognitive ownership of their learning. These constructivist views are rooted in Vygotsky's Zone of Proximal Development, which is a construct for comparing a student's actual abilities (what he or she can do alone) with proximal abilities (what he or she can do with assistance). Scaffolding is the practice of directing instruction within the ZPD, which provides the student a framework to build his or her own competencies. Motivation is also a key factor in learning, since students are best able to learn when they have a reason to do so.

8.2 Discussion

As I have delved into the literature on plagiarism and citation, I have been struck at how plagiarism has stolen the spotlight from citation. The fact of the matter is, for a scholar, citation isn't about plagarism at all; a scholar cites as a mode of carrying on a continued conversation with other scholars, of providing breadcrumbs for readers to trace sources and ideas, of lending credence to an argument—plagiarism is, in a sense, the absence of citation.

The question for me, then, is why common pedagogy emphasizes not those positive

aspects of citation, but rather how to avoid trouble and obey rules. Granted, part of acculturation into an academic community is learning the rules of that community, but why not teach the reasons behind the rules? Even the citation pedagogy which is not primarily about plagiarism addresses citation as a set of formatting rules which are foisted upon the student as canon without logic.

It may be laudable to attempt to reduce a problem—and plagiarism is a problem, no doubt—but barring willful deception, a minority of plagiarism cases, I am convinced by the literature that plagiarism is more a symptom of how citation is misunderstood. As long as undergraduate students are exposed to citation out of necessity or obligation, the majority will fail to grasp citation as a useful scholarly activity with positive reasons.

My experience and intuition suggest that most students can arrive at many of the scholarly rationales for citation with a little guided discussion, although they may be unlikely to come to those conclusions themselves. Treated as a zone of proximal development, this would imply that appropriate scaffolding pedagogy may enable students to better grasp what citation is in the scholarly community, which I propose might improve the mechanics of how undergraduates cite.

However, it is notable in this context that the mainstream pedagogy does not provide that scaffolding. Rather, it builds toward a constricting notion of citation as plagiarism avoidance. It is certainly borne out in the literature that students fear what might happen if they commit plagiarism, even accidentally. I would argue that this attitude is the inevitable consequence of a pedagogy which allows only that option. The crucial question is in what direction our pedagogy is scaffolding our students.

8.3 Future Work

At the moment, I see three major areas of this literature which are in need of improvement: the notion of citation pedagogy, undergraduate perceptions of citation, and connection of the library and information science literature with the English and antrhopology literatures.

As noted in section 2.1, there is extremely little literature on how citation itself is taught. It would be interesting to investigate the different ways in which instructors at different academic levels—primary/secondary school, lower- and upper-level undergraduate, graduate—introduce citation and style. In this way, we could get a better idea of what is actually being done, and how effective it is at whatever goals are set for that pedagogy.

Also missing from the literature, to a lesser degree, is close examination of what undergraduates believe citation is for. If students are primarily taught citation as a way to avoid plagiarism, then it would stand to reason that students would believe that citation's primary purpose is to avoid plagiarism. To this effect, I have carried out a pilot study of undergraduate perceptions of citation, described in appendix A.

While performing research for this review, I found a remarkable disconnect between different bodies of mutually informative research. As my background is in LIS, I started my search in the LIS literature. Through citation tracings, I came across Blum (2009) on the side. Discovering that her work aligned closely with my research interests, I acquired a copy of her book as soon as possible, and was stunned to find that her scholarly community barely intersects with LIS at all. The literature concerning citation and plagiarism spans many fields, but the greatest concentration is found in the English literature, and to some degree, cultural anthroploogy. As an outcome of future projects stemming from my work, it would be interesting to see further connections drawn between these disparate bodies of literature.

A

Pilot Study

Concurrently with the development of this critical review, I engaged in a small pilot study in order to begin exploring how my ideas played out in the context of undergraduates. This work was embarked on with the guiding hypothesis that the student's attitude toward citation practices and motivation will have a dramatic effect on his or her drive to research a topic and cite his or her sources according to the norms of the field.

A.1 Importance, Implications, and Relevance

As with any core aspect of scholarship, it is important that citation be taught in the most effective way scholars can develop. The current educational model of citation-as-plagiarism-avoidance might misdirect students from the scholarly benefits of citation; such a misunderstanding might be detrimental to how students interact with citation. New evidence to that effect could be used to develop better pedagogy for this vital topic, thus improving the quality of education and aiding students in their scholarly pursuits.

The topic of citation pedagogy is relevant to several groups:

- students, who may cite only out of fear of plagiarism, and who might aspire to be researchers. A student's understanding of citation affects how he or she interacts with citation;

- professors, who have a hard time communicating why citation is important;
- universities, who often deal with scandals of academic dishonesty. It is deeply in the academy's interest to investigate better methods of teaching proper scholarship;
- libraries, which traditionally are the authority on issues of citation, and which often encounter students' confusion in the context of library instruction; and
- indirectly, readers of research articles, who may have to deal with improper attribution if they try to trace references.

More broadly, this work may contribute to the body of knowledge in ILS, bibliometrics, and education. Library and information science would benefit from a better understanding of the relationship between common pedagogy and student motivations. Bibliometrics would gain further pragmatic motivations for continued study. Also, understanding how certain pedagogies affect student perceptions of key concepts in academia would be a significant result for education.

A.2 Research Questions

Based on the purpose above, I posed the following questions guide the pilot study:

- What do undergraduate students think about the motivations for and practice of citation?
- When faced with the task of writing a paper with references, how do undergraduates look for sources, decide where to incorporate them into the paper, and compose a reference list?

A.3 Method

Since I expected it would be diffcult to approach students' internal motivations and rationales for citation, I chose to use a critical incident method to facilitate semistructured interivews, after which the data were analyzed using qualitative content analysis. In the critical incident technique, the interviewee is asked to describe certain aspects of an example situation he or she has experienced, rather than the difficult task of explaining a phenomenon without an example to reference. (See Luo & Wildemuth, 2009, pp. 235–236 and Flanagan, 1954 for details on the critical incident technique.)

A.3.1 Qualitative content analysis: definition and reasoning

Zhang and Wildemuth (2009) described qualitative content analysis as a means to "examine meanings, themes, and patterns that may be manifest or latent in a particular text. It allows resarchers to understand social reality in a subjective but scientific manner." As opposed to quantitative content analysis, which primarily involves counting occurrences of manifest events, qualitative content analysis attempts to frame the general themes underlying content. (See Spurgin & Wildemuth, 2009 for details on quantitative approaches.)

In some applications of qualitative content analysis, the categories of analysis (i.e., the coding scheme used to parse the raw data) are based on a prior existing theory based on other data. In the topic at hand, however, there is very little extant theoretical framework. To my knowledge, no one has extensively studied student perceptions of citation as an academic device. In situations where little is known about the topic at hand, Zhang and Wildemuth (2009) argued, it is advisable to use more descriptive methods to begin grasping the surrounding themes.

Creswell (2009, pp. 190–193) offered a good discussion on the validity and reliabity

of qualitative procedures like qualitative content analysis. In summary, "[qualitative] validity means that the researcher checks for the accuracy of the findings by employing certain procedures, while qualitative reliability indicates that the researcher's approach is consistent across different researchers and different projects." Reliability, the author mentioned, primarily concerns careful documentation of decisions made and codings used. He offered suggestions to increase reliability such as using codebooks to circumvent coding drift and cross-checking different coders work, including intercoder reliability calculations. Validity, Creswell contrasted, is a hallmark of qualitative research, since it is based on the experiences of the researcher, the subjects, and the readers. He suggested several strategies here as well, including triangulation of different data sources, "rich, thick description" to flesh out the full situation described, clarification of researcher bias, and even an external audit to verify the whole process of the study.

The use of a qualitative approach to content analysis is contested in the literature. In her seminal text on content analysis, Neuendorf (2002) put forth the view that "a content analysis has as its goal a numerically based summary of a chosen message set. It is neither a gestalt impression nor a fully detailed description of a message or message set." In other words, content analysis must be quantitative. The author was quick to mention, however, that empirical qualitative analysis is valuable in its own right—only not under the heading of content analysis.

A.3.2 Participant gathering

The population of interest for this study is the body of undergraduate students. For the purpose of this pilot, participants were gathered from the group of seniors at UNC-Chapel Hill completing theses in the English department. Out of the twenty students meeting this qualification and contacted, two responded with a desire to

participate.

A.3.3 Interviews

I performed a semistructured interview with each participant. Lying between a fully structured interview in which all questions are scripted and an unstructured interview which is completely led by the flow of conversation in absence of a schedule, semistructured interviews draw from a list of topics and desirable questions, but remain open to the flow of conversation and topics which arise through the interviewer and interviewee's discussion (Luo & Wildemuth, 2009).

In line with my critical incident approach, I asked for the interviewees to bring along a copy of their most recent paper which involved at least five references. This minimum requirement ensured that enough material would be available to discuss during the interviews. The papers were self-selected.

The goal of each interview was be to discuss the student's motivations toward citation with respect to their example paper. After briefly explaining my research agenda, the participant and I went through their paper and discussed their motivation for citing certain sourcse. We discussed matters including what requirements the assignment placed on their sources and where they looked for sources. Once we completed the discussion of the individual paper, I concluded the interview with several open-ended questions concerning what the student thought about citation and why the practice was required of them.

In an effort to ensure student privacy, participants were assigned a code number (SR01 and SR02, respectively), which will be used below to refer to them individually.

A.3.4 Data analysis

After conducting and transcribing the interviews, I followed an informal version of the responsive interviewing technique described by Rubin and Rubin (2005, Chs. 10–11). This two-pass process first allows themes to emerge and codes to be developed holistically, and then applies that developed coding to the whole data set. This method stands in opposition to the constant comparative method espoused by Zhang and Wildemuth (2009), which involves continual iterative coding, code development, and recoding. The constant comparative method is better suited to short stretches of qualitative data, as opposed to the extended corpus of interview data which I gathered.

Rather than formally developing a list of codes, it seemed reasonable to take a more relaxed approach to analyzing the content of the transcripts. This is especially true given the very limited data collected in this pilot. Transcripts were read once to get an overview of what was said, and then reviewed to extract key concepts and quotes.

A.4 Results

Overall, my two subjects had nuanced views of citation and its scholarly purpose. Each expressed several reasons for citing:

- providing credit to sources,
- validating the hard work which a source author has done,
- imparting professionality to a paper,
- providing context to an argument,
- avoiding charges of plagiarism, and

- following instruction laid out by instructors.

SR01 explained her main rationale for citing as follows:

> You should cite because it's a good thing. You're letting that person know that their work was so awesome that you just had to quote them.

SR02 pointed out that, in English classes, citing criticisms and secondary works is often frowned upon in favor of the student "encountering the text themselves". To this end, the student viewed citations not as the crux of the argument in a paper, but the supporting context to prove that an author has done their homework and is adding something new ot the literature.

The topic of plagiarism naturally came up through the course of the interviews. Both subjects expressed a fear that, although they would never plagiarize deliberately, they might make an error in citation somewhere, be found out, and get in trouble. Each had an anecdote from their freshman year in which they had written an essay honestly, but found that certain sources matched up very closely with what they had said. Although they realize now that they hadn't done anything wrong at all, the emphasis on plagiarism in high school and early in college had instilled fear that a single misstep could be disastrous.

It came up with each subject that plagiarism and the rote mechanics of citation were stressed far more in high school than in college. SR02 suggested that this may have been a result of teachers, who went to college at a time when it wasn't so easy to Google a source, believing that college instructors would be very strict about citation style.

Given that these students were English majors, the *de facto* standard citation style for them is MLA. Although both were required to use MLA while in high school, they found that in college, instructors almost universally did not care what style their students chose to use. Rather, the emphasis is on consistency; as long as you pick a

style and adhere to it, your work is accepted.

Both students mentioned that they were baffled by the depth of information which is required in a bibliographic citation. While sometimes this information comes in handy—SR01 brought up the importance of having a particular edition of a work—the overall sentiment was that when Google can find everything, the exact details of a source are unnecessary to locate it.

In context of their papers, I explored how they went about tracking down the sources which were cited. SR01 expressed that much of her source material was included emergently from her life. As she found herself involved in a particular community or reading a book, she started making connections between her experiences and her thesis. In this way, SR01's sources were developed along the way—excluding some core sources she and her advisor had agreed upon—and incorporated into her line of argument.

SR02 had brought along a paper written while studying abroad. For this paper, she was given a general topic and a text to apply it to and asked to essentially read everything she could about that topic before writing. She was already familiar with the concepts relevant to her topic, so searching online databases by keyword was a breeze. SR02 also noted the value of browsing a library's stacks by searching online for a relevant book, jotting down the call number, and physically looking around that item to find more interesting works.

Both students expressed that it is more negative to quote-pick: deciding what you want to say in a paper ahead of time, and then finding sources which say exactly that. However, SR02 reasoned through why that's an attractive strategy. She mentioned that she, as any other student, has resorted to quote-picking under time constraints.

After explaining my research a bit more, I asked each interviewee if they had any closing thoughts, and here they provided particularly interesting gems of ideas.

SR01 pointed out that, while it is important that students be taught about why citation is good, it is also important to stress why plagiarism is bad, given that the stakes can be very high if one plagiarizes. As long as honor courts work the way they do, she said, students should be made aware of the potential consequences.

SR02 referred to citation as "an art", in that while some professors don't teach it explicitly, it's the sort of thing that "paper after paper, you just start to understand." To her, although instruction on the rules is valuable, learning to cite properly comes with time and experience.

A.5 Implications

Of course, this pilot study was very limited in scope and subect pool, and generalizabilty was not a goal of these interviews. Since both of my participants came from a similar academic background and context, they had similar ideas on citation and plagiarism. However, these interviews did point out some interesting areas for future exploration.

First of all, my work has been focused primarily on the undergraduate experience. However, both participants expressed that their first experiences with citation—and fear of plagiarism—came in high school. It would be interesting to more closely explore how high school citation/plagiarism pedagogy affects how students view citation in college and beyond.

Also, each student had very well-thought-out views on citation. Although this may have been a combined effect of their being seniors and English majors, it runs contrary to the traditional literature's stance that students don't understand at all what citation is for.

Methods of source selection were also notable. SR01 used her personal experience to emergently find what fit into her topic; SR02 discussed her process of getting

familiarized with a concept, then reading as much literature as possible. Although much work has been done on the types of sources students end up with, there may be some ground left to cover regarding the ways in which students choose sources—their processes, so to speak.

Overall, the pilot study provides some interesting context. It is certainly worth refining the structure of the interviews—each at times wandered off-topic, and some questions should be added to incorporate the concepts noted above—but these results show promise that similar interviews with a wider variety of students may be valuable.

References

Abbott, A. (2007). Academic accused of living on borrowed lines. *Nature*, *448*(7154), 632–633. doi:10.1038/448632b.

Alfieri, L., Brooks, P. J., Aldrich, N. J., & Tenenbaum, H. R. (2010). Does discovery-based instruction enhance learning? *Journal of Educational Psychology*, *103*(1), 1–18. doi:10.1037/a0021017.

Allen, K. (2005, August). Online learning: constructivism and conversation as an approach to learning. *Innovations in Education and Teaching International*, *42*(3), 247–256. doi:10.1080/01587910500167985.

Anderson, M. S., & Steneck, N. H. (2011). The problem of plagiarism. *Urologic oncology*, *29*(1), 90–94. doi:10.1016/j.urolonc.2010.09.013.

Association of College and Research Libraries. (2009). *Standard five: Ethical/Legal.* American Library Association, ACRL. Available from `http://www.ala.org/ala/mgrps/divs/acrl/issues/infolit/standards/stnd5/index.cfm`

Atkinson, D., & Yeoh, S. (2008). Student and staff perceptions of the effectiveness of plagiarism detection software. *Australasian Journal of Educational Technology*, *24*(2), 222–240. Available from `http://www.ascilite.org.au/ajet/ajet.html`

Austin, Z., Simpson, S., & Reynen, E. (2005). "The fault lies not in our students, but in ourselves": academic honesty and moral development in health professions education–results of a pilot study in Canadian pharmacy. *Teaching in Higher*

Education, *10*(2), 143–156. doi:10.1080/1356251042000337918.

Badke, W. (2007, Sept/Oct). Give Plagiarism the Weight It Deserves. *Online*, 58–60.

Barrón-Cedeño, A., & Rosso, P. (2009). On automatic plagiarism detection based on n-grams comparison. In M. Boughanem, C. Berrut, J. Mothe, & C. Soule-Dupuy (Eds.), *Advances in Information Retrieval 31th European Conference on IR Research, ECIR 2009, Toulouse, France, April 6-9, 2009. Proceedings* (Vol. 5478, pp. 696–700). Berlin, Heidelberg: Springer Berlin Heidelberg. doi:10.1007/978-3-642-00958-7.

Barry, E. S. (2006). Can paraphrasing practice help students define plagiarism? *College Student Journal*, *40*(2), 377–384.

Belter, R., & Pre, A. du. (2009, October). A strategy to reduce plagiarism in an undergraduate course. *Teaching of Psychology*, *36*(4), 257–261. doi:10.1080/00986280903173165.

Blum, S. D. (2009). *My Word!: Plagiarism and College Culture*. Ithaca, N.Y.: Cornell University Press.

Bouville, M. (2008). Plagiarism: words and ideas. *Science and Engineering Ethics*, *14*(3), 311–322. doi:10.1007/s11948-008-9057-6.

Browne, R. F. J., Logan, P. M., Lee, M. J., & Torreggiani, W. C. (2004). The accuracy of references in manuscripts submitted for publication. *Canadian Association of Radiologists Journal*, *55*(3), 170–173. Available from `http://www.ncbi.nlm.nih.gov/pubmed/15237778`

Carlson, J. (2006). An examination of undergraduate student citation behavior. *The Journal of Academic Librarianship*, *32*(1), 14–22. doi:10.1016/j.acalib.2005.10.001.

Ceska, Z., & Fox, C. (2009). The influence of text pre-processing on plagiarism detection. In *International conference ranlp 2009* (pp. 55–59). Borovets, Bulgaria.

Cheyne, J. A., & Tarulli, D. (2005). Dialogue, difference, and voice in the zone of proximal development. In H. Daniels (Ed.), *An introduction to Vygotsky* (Second ed., pp. 125–147). New York, NY: Routledge.

Clark, S., & Chinburg, S. (2010). Research performance in undergraduates receiving face to face versus online library instruction: A citation analysis. *Journal of Library Administration*, *50*(5), 530–542. doi:10.1080/01930826.2010.488599.

Clarke, M. E., & Oppenheim, C. (2006). Citation behaviour of information science students II: Postgraduate students. *Education for Information*, *24*, 1–30.

Clough, P. (2000). *Plagiarism in natural and programming languages: an overview of current tools and technologies.* Sheffield, UK. Available from `http://www.dcs.shef.ac.uk/nlp/meter/Documents/reports/plagiarism/Plagiarism.pdf`

Committee on Developments in the Science of Learning. (2000). *How people learn: brain, mind, experience, and school* (Expanded ed.; J. D. Bransford, A. L. Brown, R. R. Cocking, M. S. Donovan, & J. W. Pellegrino, Eds.). Washington, D.C.: National Academy Press.

Cook-Cottone, C., Dutt-Doner, K., & Schoen, D. (2007). Understanding student article retrieval behaviors: Instructional implications. *Research Strategies*, *20*(4), 379–388. doi:10.1016/j.resstr.2006.12.011.

Cosma, G., & Joy, M. (2008). Towards a definition of source-code plagiarism. *IEEE Transactions on Education*, *51*(2), 195–200. doi:10.1109/TE.2007.906776.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (Third ed.). Los Angeles, CA: SAGE.

Crocker, J., & Shaw, P. (2002). Research student and supervisor evaluation of intertextuality practices. *Hermes, Journal of Linguistics*, *28*, 39–58.

Davis, P. M. (2002). The Effect of the Web on Undergraduate Citation Behavior: A

2000 Update. *College & Research Libraries*, *63*(1), 53–60.

Davis, P. M. (2003). Effect of the Web on Undergraduate Citation Behavior: Guiding Student Scholarship in a Networked Age. *portal: Libraries and the Academy*, *3*(1), 41–51. doi:10.1353/pla.2003.0005.

Davis, P. M., & Cohen, S. A. (2001). The effect of the web on undergraduate citation behavior 1996–1999. *Journal of the American Society for Information Science and Technology*, *52*(4), 309–314. doi:10.1002/1532-2890(2000)9999:9999¡::AID-ASI1069¿3.3.CO;2-G.

Delbanco, N. (2005). In Praise of Imitation. In *Anywhere out of the world: Essays on travel, writing, death* (pp. 1–16). New York, NY: Columbia University Press.

Edzan, N. N. (2007). Tracing information literacy of computer science undergraduates: a content analysis of students' academic exercise. *Malaysian Journal of Library & Information Science*, *12*(1), 97–109.

Ellery, K. (2008a). An investigation into electronic-source plagiarism in a first-year essay assignment. *Assessment & Evaluation in Higher Education*, *33*(6), 607–617. doi:10.1080/02602930701772788.

Ellery, K. (2008b). Undergraduate plagiarism: a pedagogical perspective. *Assessment & Evaluation in Higher Education*, *33*(5), 507–516. doi:10.1080/02602930701698918.

Fiedler, R., & Kaner, C. (2010). Plagiarism-detection services: How well do they actually perform? *IEEE Technology and Society Magazine*, *29*(4), 37–43. doi:10.1109/MTS.2010.939225.

Fischer, B. a., & Zigmond, M. J. (2011). Educational approaches for discouraging plagiarism. *Urologic oncology*, *29*(1), 100–103. doi:10.1016/j.urolonc.2010.11.014.

Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, *51*, 327–358.

Freimer, G. R., & Perry, M. M. (1986). Student Problems with Documentation. *Journal of Academic Librarianship*, *11*(6), 350–353.

Germek, G. (2009). Imagine no possessions: Librarians, the net-generation student, and the imminent victory of plagiarism. *College & Undergraduate Libraries*, *16*(4), 338–357. doi:10.1080/10691310903356000.

Gibson, N. S., & Chester-Fangman, C. (2011). The librarian's role in combating plagiarism. *Reference Services Review*, *39*(1), 132–150. doi:10.1108/00907321111108169.

Gill, A. (2009, June). There are 3,000 ways to cite source material - why not make it one? *Times Higher Eductions*, 24–25.

Gipp, B., & Beel, J. (2010). Citation based plagiarism detection - a new approach to identify plagiarized work language independently. In *HT '10* (pp. 273–274).

Green, P. (2005). Spaces of influence: A framework for analysis of an individuals contribution within communities of practice. *Higher Education Research and Development*, *24*(4), 293–307. doi:10.1080/07294360500284607.

Gruner, S., & Naven, S. (2005). Tool support for plagiarism detection in text documents. In *Proceedings of the 2005 ACM symposium on applied computing - SAC '05* (pp. 776–781). New York, New York, USA: ACM Press. doi:10.1145/1066677.1066854.

Hammond, C. C., & Brown, S. W. (2008, May). Citation searching: Search smarter and find more. *Computers in Libraries*, 10–12, 61.

Havnes, A. (2008). Peer-mediated learning beyond the curriculum. *Studies in Higher Education*, *33*(2), 193–204. doi:10.1080/03075070801916344.

Head, A. J., & Eisenberg, M. B. (2010). *Truth Be Told: How College Students Evaluate and Use Information in the Digital Age.* Available from `http://projectinfolit.org/`

Heitman, E., & Litewka, S. (2011). International perspectives on plagiarism and considerations for teaching international trainees. *Urologic oncology*, *29*(1), 104–108. doi:10.1016/j.urolonc.2010.09.014.

Hovde, K. (2007). You cant get there from here: Student citations in an ephemeral electronic environment. *College & Research Libraries*, *68*(4), 312–321. Available from `http://crl.acrl.org`

Howard, R. M. (1995). Plagiarisms, authorships, and the academic death penalty. *College English*, *57*(7), 788–806. doi:10.2307/378403.

Howard, R. M. (1999). *Standing in the Shadow of Giants: Plagiarists, Authors, Collaborators*. Stamford, CT: Ablex.

Imler, B., & Hall, R. A. (2009). Full-text articles: faculty perceptions, student use, and citation abuse. *Reference Services Review*, *37*(1), 65–72. doi:10.1108/00907320910935002.

iParadigms. (2011). *Turnitin.* Available from `http://turnitin.com`

Jackson, P. A. (2006). Plagiarism instruction online: Assessing undergraduate students ' ability to avoid plagiarism. *College & Research Libraries*, *67*(5), 418–428. Available from `http://crl.acrl.org`

Jiao, Q. G., Onwuegbuzie, A. J., & Waytowich, V. L. (2008). The relationship between citation errors and library anxiety: An empirical study of doctoral students in education. *Information Processing & Management*, *44*(2), 948–956. doi:10.1016/j.ipm.2007.05.007.

Knight-Davis, S., & Sung, J. S. (2008). Analysis of citations in undergraduate papers. *College & Research Libraries*, *69*(5), 447–458. Available from `http://crl.acrl.org`

Kock, N. (1999). A case of academic plagiarism. *Communications of the ACM*, *42*(7), 96–104. doi:10.1145/306549.306594.

Landau, J., Druen, P., & Arcuri, J. (2002). Methods for Helping Students Avoid Plagiarism. *Teaching of Psychology*, *29*(2), 112–115. doi:10.1207/S15328023TOP2902_06.

Lee, H. W., Lim, K. Y., & Grabowski, B. L. (2010). Improving self-regulation, learning strategy use, and achievement with metacognitive feedback. *Educational Technology Research and Development*, *58*(6), 629–648. doi:10.1007/s11423-010-9153-6.

Lethem, J. (2007, February). The ecstasy of influence: A plagiarism. *Harper's Magazine*, 59–71.

Lewis, L. A. (2007). An academic librarian reports on the impact of apa's new electronic references guidelines. *Reference & User Services Quarterly*, *48*(4), 128–131.

Liddell, J., & Fong, V. (2005, February). Faculty perceptions of plagiarism. *Journal of College and Character*, *6*(2). doi:10.2202/1940-1639.1416.

LoCastro, V., & Masuko, M. (2002). Plagiarism and academic writing of learners of english. *Hermes, Journal of Linguistics*, *28*, 11–38.

Luo, L., & Wildemuth, B. M. (2009). Semistructured interviews. In B. M. Wildemuth (Ed.), *Applications of social research methods in information and library science* (pp. 232–241). Westport, CT: Libraries Unlimited.

Mages, W. K., & Garson, D. S. (2010). Get the cite right: Design and evaluation of a high-quality online citation tutorial. *Library & Information Science Research*, *32*(2), 138–146. doi:10.1016/j.lisr.2009.10.004.

McCabe, D., & Treviño, L. K. (2002). Honesty and honor codes. *Academe*, *88*(1), 37–41. Available from `http://www.aaup.org/AAUP/pubsres/academe/`

McCabe, D. L., & Pavela, G. (2004, May/June). Ten (Updated) Principles of Academic Integrity. *Change*, 10–14.

McCuen, R. H. (2008). The plagiarism decision process: The role of pressure and rationalization. *IEEE Transactions on Education*, *51*(2), 152–156. doi:10.1109/TE.2007.904601.

Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.

Oermann, M. H., Mason, N. M., & Wilmes, N. A. (2002). Accuracy of references in general readership nursing journals. *Nurse Educator*, *27*(6), 260–264.

Park, C. (2003). In other (people's) words: plagiarism by university students–literature and lessons. *Assessment & Evaluation in Higher Education*, *28*(5), 471–488. doi:10.1080/0260293032000120352.

Park, S., Mardis, L. a., & Ury, C. J. (2011). I've lost my identity—oh, there it is . . . in a style manual: Teaching citation styles and academic honesty. *Reference Services Review*, *39*(1), 42–57. doi:10.1108/00907321111108105.

Parker, A., & Hamblen, J. O. (1989, May). Computer algorithms for plagiarism detection. *IEEE Transactions on Education*, *32*(2), 94–99. doi:10.1109/13.28038.

Pennycook, A. (1996). Borrowing others' words: Text, ownership, memory, and plagiarism. *TESOL Quarterly*, *30*(2), 201. doi:10.2307/3588141.

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*(1), 33–40.

Pintrich, P. R., & Schunk, D. H. (1996). *Motivation in education: Theory, research, and applications*. Englewood Cliffs, N.J.: Prentice-Hall.

Reich, E. S. (2010). Self-plagiarism case prompts calls for agencies to tighten rules. *Nature*, *468*(7325), 745. doi:10.1038/468745a.

Rodríguez Illera, J. (2001). Collaborative environments and task design in the university. *Computers in Human Behavior*, *17*(5-6), 481–493. doi:10.1016/S0747-5632(01)00020-6.

Rosales, F., Garcia, A., Rodriguez, S., Pedraza, J. L., Mendez, R., & Nieto, M. M. (2008). Detection of plagiarism in programming assignments. *IEEE Transactions on Education*, *51*(2), 174–183. doi:10.1109/TE.2007.906778.

Roy, A. M. (1999). Whose words these are i think i know: Plagiarism, the postmodern, and faculty attitudes. In L. Buranen & A. M. Roy (Eds.), *Perspectives on plagiarism and intellectual property in a postmodern world* (pp. 55–61). Albany, NY: State University of New York.

Roy, C. K., & Cordy, J. R. (2007). *A survey on software clone detection research.* Ontario, Canada. Available from `http://research.cs.queensu.ca/TechReports/authorsR.html#Roy,ChanchalKumar`

Rubin, H. J., & Rubin, I. S. (2005). *Qualitative interviewing: The art of hearing data* (Second ed.). Thousand Oaks, CA: SAGE.

Schuetze, P. (2004). Evaluation of a brief homework assignment designed to reduce citation problems. *Teaching of Psychology*, *31*(4), 257–259. doi:10.1207/s15328023top3104_6.

Scollon, R. (1995). Plagiarism and ideology: Identity in intercultural discourse. *Language in Society*, *24*(1), 1–28.

Segal, S., Gelfand, B. J., Hurwitz, S., Berkowitz, L., Ashley, S. W., Nadel, E. S., et al. (2010). Plagiarism in residency application essays. *Annals of Internal Medicine*, *153*(2), 112–120.

Selwyn, N. (2008). 'not necessarily a bad thing ...': a study of online plagiarism amongst undergraduate students. *Assessment & Evaluation in Higher Education*, *33*(5), 465–479. doi:10.1080/02602930701563104.

Spivey, C. A. (2004). Reference list accuracy in social work journals. *Research on Social Work Practice*, *14*(4), 281–286. doi:10.1177/1049731503262131.

Spurgin, K., & Wildemuth, B. M. (2009). Content analysis. In B. M. Wildemuth

(Ed.), *Applications of social research methods in information and library science* (pp. 297–307). Westport, CT: Libraries Unlimited.

Tomaiuolo, N. (2007, July/August). Citations and Abberations. *Searcher*, 17–24.

Vosen, M. A. (2008). Using blooms taxonomy to teach students about plagiarism. *English Journal*, *97*(6), 43–46.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Wang, L. (2007). Sociocultural learning theories and information literacy teaching activities in higher education. *Reference & User Services Quarterly*, *47*(2), 149–158.

Warn, J. (2006, May). Plagiarism software: no magic bullet! *Higher Education Research and Development*, *25*(2), 195–208. doi:10.1080/07294360600610438.

Whitaker, E. E. (1993). A pedagogy to address plagiarism. *College Composition and Communication*, *44*(4), 509–514. doi:10.2307/358386.

White, D. R., & Joy, M. S. (2004). Sentence-based natural language plagiarism detection. *ACM Journal on Educational Resources in Computing*, *4*(4), 1–20. doi:10.1145/1086339.1086341.

Yilmaz, I. (2007, October). Plagiarism? No, were just borrowing better English. *Nature*, *449*, 658.

Zhang, Y., & Wildemuth, B. M. (2009). Qualitative analysis of content. In B. M. Wildemuth (Ed.), *Applications of social research methods in information and library science* (pp. 308–319). Westport, CT: Libraries Unlimited.

Zwagerman, S. (2008). The scarlet p: Plagiarism, panopticism, and the rhetoric of academic integrity. *College Composition and Communication*, *59*(4), 676–710. Available from `http://www.ncte.org/cccc/ccc`